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CONTENTS.

	Page.
Changes at the United States Mints	409
Mineral Production of Canada, 1894	409
Free Silver Coinage vs. Bimetallism	409
The Broken Hill Silver Mines	410
Production of Pig Iron in Great Britain in 1894	410
The Copper Production of the United States in 1894	410
The Movement of Silver and Copper in Kernel Roasting, Henry W. Edwards	411
Is the Use of Cyanide of Potassium for Gold Extraction Common Property E. Andreoli	411
Abstracts of Official Reports	413
Two Interesting Cases of Abnormal Conditions in Pig Iron, T. W. Hogg	414
*Moritz Ferdinand Gaetzschmann R. W. Raymond	415
*Improvements in Quarrying Machinery	416
The Ammon Mines, Fergus County, Mon H. C. Freeman	416
Electric Power Installation at Pachuca, Mexico	417
Recent Decisions Affecting the Mining Industry	418
Patents Relating to Mining and Metallurgy	418
Personal, Obituary, Societies, Technical Schools, Industrial	419
Notes: Coal Near Madras, 414—New Machinery for Diamond Mining, 415—Data on Road Traffic in London, 415—Basic Slag for Agricultural Purposes, 418—A Recent Armor Plate Test, 418—The Atomic Weight of Tellurium, 418.	

* Illustrated.

MINING NEWS.		LATEST MINING NEWS	423	PETROLEUM	428	Coal Stocks	430
Alaska	420	MARKETS:		MINING STOCKS:		Ind. and Trust.	430
California	420	COAL:		New York	428	Colo. Springs	430
Colorado	420	New York	423	Boston	428	Helena	431
Florida	421	Buffalo	424	Colo. Springs	428	Shanghai	431
Idaho	421	Chicago	424	Salt Lake City	428	Baltimore	431
Kentucky	421	Pittsburg	424	San Francisco	429	Salt Lake City	431
Michigan	421	IRON:		London	429	London	431
Minnesota	421	New York	424	Paris	429	Paris	431
Missouri	422	Buffalo	425	Dividends	429	Mexico	431
Montana	422	Chicago	425	Meetings	429	Valparaiso	431
Nevada	422	Pittsburg	425	March Divid.	429	Philadelphia	431
New Mexico	422	Philadelphia	425	Assessments	429		
North Carolina	422	Cartagena	425	STOCK QUOTATIONS:		CURRENT PRICES:	
Ohio	422	METALS:		New York	430	Chemicals	431
Oregon	422	Gold & Silver	426	Boston	430	Minerals	431
Pennsylvania	423	Other Metals	427	Duluth	430	Rarer Metals	431
Utah	423	CHEMICALS AND MINERALS.		Aspen	430	MINING CO'S	432
Virginia	423	New York	428	San Francisco	430		
West Virginia	423	Liverpool	428	Denver	430	ADVT. RATES,	18
Wyoming	423			Pittsburg	430	ADVT. INDEX.	15

ERRATA.

In our issue of April 6th, pages 313 and 315, referring to the mineral production of Ontario, the output of petroleum in 1894 should have been 997,496 barrels, instead of 34,912,360 gallons as there stated. This shows a slight decrease from the production in 1893, which amounted to 1,045,000 barrels.

The reported intention of the President to take the mints entirely out of politics, and to appoint their officers without reference to political considerations, is a matter for congratulation among those who have the true interests of the Government and the people at heart. The Carson Mint and other scandals, which have disgraced and injured the Bureau in the past, have been due to the intrusion of politics into a department which above all others, requires the same careful management as is necessary to the success of any business institution. The more strictly the present determination is adhered to in the future the better it will be for the inter ests of the people.

In a letter on the recent English decision on the cyanide case in our issue of April 27th, page 388, the third line in next to the last paragraph in the first column, appears the sentence, "Such a claim occurs in the American patents." This should read, "Such a claim does not occur in the American patents." Through this unfortunate error in marking the manuscript the entire meaning of the paragraph was altered.

The point our correspondent desired to make, and which was made in our editorial comment of the previous week, to which he referred, was that the claim which alone caused the adverse judgment of the English Court in the cyanide case does not appear in the American patent of MacArthur & Forrest, and had the American patent been before the English judges, with only the evidence presented in the Pielsticker case, it would have been upheld.

The summary of the mineral production of Canada during 1894, which has just been completed by Mr. Elfric Drew Ingall, mining engineer of the Geological Survey, shows an output for the year of 52,992 oz. gold, valued at $954,451. The value of Nova Scotia and Ontario gold was $19.50 per oz.; Quebec, $18, and British Columbia and Yukon $17. The production of iron ore was 109,991 tons of 2,000 lbs., of which 108,871 tons were converted into 49,967 tons of pig iron. The production of nickel was 4,907,430 lbs., and of lead 5,792,700 lbs. The total value of all products during the year is given as $20,900,000, which is greater than that of any previous year, the valuation in 1893 being $19,250,000; in 1892, $19,500,000, and in 1891, $20,500,000. Prior to the last-named year the greatest value was $18,000,000. Details of the production as compared with previous years will appear next week.

Free silver coinage without international agreement means depreciated silver monometallism.

The advocates of depreciated money, that fatal though at present popular, delusion, are the worst enemies of real bimetallism and of silver, for they masquerade under the title of "bimetallists," while what they want is silver monometallism, because silver is depreciated. They pretend they wish to restore the value of silver, while what they are working for is depreciated money, the more depreciated the better, and if they had silver they would want still cheaper paper. The great hardship they find in paying debts in gold or its equivalent, which were contracted in gold or its equivalent, because the commercial value of the silver equivalent has depreciated, is pure empty pretense.

When it is considered that in this country only 4 per cent. of the debts contracted run for longer than one year, it is evident how small a foundation there is for so much talk. Not one of those who complain of the hardships of paying in gold a gold debt contracted when the commercial value of silver was $1.29 an ounce, before 1873, takes any account of the indisputable fact that wages—the commodity in which 99 per cent. of debtors have to pay—have since then advanced universally in purchasing power, and in most cases also as measured in gold. Neither does one of them suggest that if silver should advance in commercial value, as it has done recently, debts contracted when silver was low should be increased in amount as silver advanced.

What this country needs is the cheap money that comes through good credit. Absolute honesty and ability to pay are the foundations of good credit and low rates of interest—that is, of cheap money of the best quality. No other than the best quality will or ever should satisfy Americans.

"The Engineering and Mining Journal" advocates a real bimetallism, not merely, nor chiefly, because it would advance the value of silver, but because universal bimetallism, by making silver and gold interchangeable and therefore both available, would greatly increase the foundation for commercial credit, which constitutes 95 per cent. of the world's circulating medium, and would prevent those disastrous panics which are largely due to the fear of the insufficiency of that foundation.

An intelligent universal bimetallism which would place the control of the ratio between silver and gold in a permanent commission or clearing-

house, would absolutely prevent any danger of overproduction of either metal, and would permit, without danger, loss to individuals or derangement of industry, such changes in the character of the world's money as experience might show to be desirable. It would do away with those blind and ignorant experiments, in depreciating the standard or in trying to ascertain whether the business of the world can be carried on with one metal alone, which have for many years been turning the business of the world upside down. The present methods allow every new, wild theory which calls itself "progress," and every fossilized idea that appeals to the timid as "conservatism," to engender a very natural lack of confidence in the outcome of our financial tinkering, and keeps the whole business world in a tremor of fright, which invites panics and disasters.

Surely the money of the word, the one thing in which every human being is interested, should, in these enlightened days, be managed in an intelligent manner by the united action of civilized nations. We wisely submit to international arbitration much less important questions which affect common interests.

The adoption of a common standard—gold—and of universal bimetallism become absolutely safe when the regulation of the value ratio between the metals is placed in the control of a permanent international commission. This would not only prevent any dangerous overproduction of either metal through the simple control of its commercial value, but if improved methods of conducting business or a better foundation than silver and gold, or than either of them, should be found for commercial credits, it would permit a gradual change to that better foundation without panic or injury to any individual or industry.

THE BROKEN HILL SILVER MINES.

The report of the Broken Hill Proprietary Company, an abstract of which is given in another column, states, apparently without reserve, the condition of the great silver mine. As has been generally known, the richer deposits of the Barrier Range have been gradually approaching exhaustion and the time when the company must fall back upon its lower grade ores, which have hitherto been set aside, on account of their comparatively small yield and the difficulty of working them, was rapidly approaching. The yield for the past two years has been kept up nearly to the maximum by pushing work and increasing the amount of ore taken out, although the value was gradually decreasing. In the half year ending with November last, for instance, the average result obtained was only 20·7 ounces of silver to the ton, which is nearly one-third less than the average obtained, if we take the whole period from the opening of the mine to the present time. This fact, coupled with the fall in the prices of lead and silver, has begun to curtail the receipts of the company, although it has so far been able to keep up its dividend payments. According to the statement of Manager John Howell, there are now believed to exist in the mine about 1,000,000 tons of oxidized ores of a character suitable for treatment in the smelting works. This is about a year and a half's supply at the present rate of working, and unless in the meantime other ore bodies are discovered, which does not seem very probable, the system of reduction will have to be entirely changed and a considerable portion of the present works will become useless.

This result has been to some extent foreseen and provided for by the company. The deposits of low-grade sulphides are very extensive, and the substitution, two years ago, of open cut working for the old shaft system of mining will enable the company to take out an enormous amount of ore. The plan as at present outlined is to concentrate these ores, roast them and ship the concentrates to the coast—probably to Port Pirie—where fuel and other requisites can be obtained more cheaply than on the Barrier Range, and establish new reduction works there. This will require some expenditure of capital, and whether a satisfactory return can be earned, of course, remains to be seen. It is most probable that there will be a reduction in the dividend rate and in the total silver product of the mine.

There has been a considerable speculation in Broken Hill shares for some time past in London. It must be said to the credit of the directors, that they seem to have made a very full and fair statement of the condition of affairs in the present report, and while they are doubtless willing to put the best posible interpretation on the prospects for the future, they do not seem to have sought to conceal anything. This conduct is in such marked contrast to the action of some other companies, both in the United States and in England, that it deserves special mention. We commend it to the consideration of the trustees of the Boston & Montana Copper Company.

PRODUCTION OF PIG IRON IN GREAT BRITAIN, 1894.

The production of pig iron in Great Britain during 1894 shows a large increase over the output during 1892 and 1893, being 534,904 tons in excess of the latter year. The greatest increase is in the Cleveland district, where the output was 239,235 tons greater than in 1893. The only heavy decline is noted in Scotland, when the production decreased 128,253 tons in 1894. South Staffordshire, Shropshire and North Wales also show a slight decrease, but all other districts have increased.

The output of various classes of iron in tons of 2,240 lbs. was as follows:

Forge and foundry, 3,583,459; hematite, 3,409,717; spiegel and ferro, 92,806; basic, 278,763; total 1894, 7,364,745; 1893, 6,829,841.

The number of furnaces in and out of blast during 1893 and 1894 was as follows:

1893.			1894.		
In.	Out.	Total.	In.	Out.	Total.
310	385	695	323 1/3	374 2/3	698

A noticeable feature of the trade is the large increase in stocks at the close of 1894, amounting in all to 1,043,178 tons, as against 868,730 tons at the close of 1893. The greater part of this increase is in the Cleveland district, though all districts excepting Scotland, and North and South Wales show greater or less increase in their holdings.

Comparing these figures with the United States production, it is noted that our output, which was 9,157,000 tons in 1892, declined to 7,124,502 tons in 1893, and 6,657,388 tons in 1894, so that during the past year, for the first time since 1889, our production has been less than that of Great Britain. Our stocks were, however, but 597,688 tons, or 11·9% of our output, while the British stocks were almost twice as much, and amount to 14·1% of the production.

THE COPPER PRODUCTION OF THE UNITED STATES IN 1894.

The preliminary statistics, which were published in the "Engineering and Mining Journal," January 19th, showed the output of the great mines and a portion of that of the mines not included in that list, though which, nevertheless, add a very important part to the total output. We now publish the detailed statement of production, compiled from direct returns of all the producers, for the forthcoming volume of the Mineral Industry, and it shows that the output of copper in 1894 exceeded that in any previous year in the history of this or any other country, notwithstanding the fact that the price of copper (9·488 cent per pound for Lake) was lower than ever before known and much below the actual average cost of production only a few years ago. In addition, the home market was greatly depressed and consumption curtailed in many important departments. This marvellous result was due, 1st, to the great improvements introduced within a few years in copper metallurgy, and to a less extent in mining, and 2d, to the vast size and richness of our copper deposits. That the first cause was the more important is evident from the fact that the grade of the ore in several of our large mines is declining as depth is attained, and that few new mines and no new districts, have been opened during the year.

In no other department of metallurgy has progress recently been so

COPPER PRODUCTION IN MICHIGAN.
(Pounds of fine copper.)

Mine.	1890.	1891.	1892	1893.	1894.
Allouez	1,407,898	1,241,423	546,530	.....	.....
Atlantic	3,619,972	3,653,671	3,703,875	4,221,933	4,437,609
Calumet & Hecla	58,836,904	55,292,576	58,292,576	62,825,674	61,812,722
Centennial	.....	435 784	.....	.....	.....
Central	1,413,391	1,321,417	1,625,982	1,177,500	584,950
Copper Falls	650,000	1,440,000	1,40.,000	1,000.000	.....
Franklin	5,638,112	4,319,840	3,767,000	3,501,244	3,602,608
Huron	1,736,777	1,215.734	461,499	562,776	.....
Kearsarge	1,598,525	1,727,390	1,589,192	1,546,318	1,998,710
Mass	6 [illegible]00	30 114	17,450	22,737	41,805
National	123.897	103,888	36.3e5	63 433	36,390
Osceola	5,294,792	6,543,358	6,894,256	6,216,975	6,879,000
Peninsular	1,108,660	1,299,670	973,217	.....	.....
Quincy	8,064 253	10,542,519	11,103,926	14,398,477	15,484,014
Ridge	17,615	43,049	41,462	25,388	52,481
Tamarack	10,106,741	16,161,312	16,426,633	15,085,113	15,375,000
Tamarack Junior	.....	.....	796,709	1,610,259	2,350,000
Wolverine	.....	312,112	500,074	1,025,062	1,665,255
All other mines	1,017,503	121,509	11,750	251,304	176,011
Total pounds	100,695,000	114,107,424	108,179,576	113,537,793	114,526,555

COPPER PRODUCTION IN MONTANA.
(Pounds of fine copper.)

Mine.	1890.	1891.	1892.	1893.	1894.
Anaconda	64,046,812	46,500,000	100,000,000	75,256,657	95,578,000
Boston & Montana	26,942,298	26,507,929	30,386,595	31 800,000	57,937,633
Butte & Boston	5,485,434	18,392,054	10,641,269	20,457,928	
Butte, Red. Works	3,001,209	2.915,000	2,864,000	2.9-5,485	2,282,000
Colorado S. & M. Co	2,320,000	3,641,384	4,560,972	6,703,188	5,158,730
Hecla Con. M. Co	159,980	91,090	159,859	77,565	362,897
Parrot	9,000,000	14,108,382	12,438,782	7,791,167	7,469,908
Montana Ore Purchasing Co. and others	.....	.....	.....	9,227,810	14,305,587
Total	110,955,733	112,359,839	161,051,477	154,706,589	183,094,755

COPPER PRODUCTION OF ARIZONA.
(Pounds of fine copper.)

Year.	Arizona	Copper Queen*	Commercial.	Detroit.	Old Dominion.	United Verde.	United Globe.	Other Mines.	Total.
1890	5,164,906	13,120,934	.....	4,906,704	7,411,214	5,475,573	398,849	897,861	36,977,192
1891	5,673,611	13,022,957	.....	4,194,672	6,982,161	,350,087	2,302,765	4,671.271	41,891,699
1892	5,893,533	12,916,416	282,451	1,918,594	7,698 297	9,524,492	.....	149,333	38,383,116
1893	7,871,819	13,795,618	273,330	4,942,728	7,665,293	9,121,146	.....	103,741	43,773,675
1894	9,935,812	12,968,372	90,805	5,577,744	4,839,386	10,904,453	.....	214,536	44,531,108

* Includes the Holbrook & Cave.

rapid as in that of copper. Costs have been reduced in every operation, in handling the ore, in roasting it, in smelting, in bessemerizing and in electrolytic refining. The record of this unrivaled progress is given in the third volume of the Mineral Industry, which is now nearly completed and which will be found, as the preceeding volumes of this work have already become, indispensable text books to those engaged in this industry.

Copper was the only one of the important metals of which the production in this country has steadily increased through the lowering prices of the panic years and the depression in trade which have restricted the natural growth of consumption. Consumption amounted to 176,259,646 pounds, which though less than in 1891 and 1892, was considerably greater than in 1893. The amount consumed in this country was a little greater than that exported.

The total production from domestic ores was 353,504,314 pounds, or 8 per cent greater than in 1893. The amount smelted here from imported, mostly Canadian, ores, was 8,279,761 pounds,* which was a little more than in 1893, though less than in 1891 and 1892. The imports of ores for smelting here should hereafter increase, for the cost of smelting and refining is lower here than in any other country.

The imports of copper in bars, ingots and old amounted to only 3,446,724 pounds, and this added to the total amount smelted and to the stock on hand at the beginning of the year, gave us a gross supply of 423,470,799 pounds, or 189,049 long tons. The exports, though a little less than in 1893, still amounted to 169,651,153 pounds, or 75,737 tons, and only 6,107,984 pounds of this was exported in ore, regulus or matte. The stock of copper on hand at the end of 1894 was larger than at the close of the preceding year, which was natural, because of the enormous increase of capacity of our electrolytic works (our stock taking account of all the copper held in matte, or other marketable form, and in process of refining), and yet it is only about 20 per cent of our production. As a rule producers have not large stocks, the holdings have changed, some apparently being held for a better market, while producers have been, as a rule, selling as fast as the copper was ready. Deducting the exports and stocks from the total supply, we get the consumption, which amounted to 176,259,646 pounds.

The amount of copper refined electrolytically in this country in 1894 amounted to 150,000,000 pounds. The outlook for the copper industry is excellent. Consumption, especially in electric work, is growing at a wonderful rate, and with the revival of business it is probable that our home demand will absorb nearly our whole production, and that prices will advance somewhat, though those of some years ago will probably never be seen again. Even the very low price of 1894 was not without a fair profit to the majority of our producers.

COPPER PRODUCTION IN THE UNITED STATES, IN POUNDS OF FINE COPPER.

States.	1891.		1892.		1893.		1894.	
	Pounds.	Long Tons.	Pounds.	Long Tons.	Pounds.	Long Tons.	Pounds.	Long Tons.
Arizona	41,894,699	18 703	38,383,116	17,135	43,773,675	19,542	44,531,108	19,880
California	3.750,000	1,673	3,200,000	1,430	2,825,773	1,261	120,156	54
Colorado	7,000,000	3,125	7.250,000	3,236	7,121,257	3,179	6,528.214	2,914
Michigan	114,107,424	50,940	108,179,576	48.291	113,537,793	50,686	114,526,555	51,128
Montana	112.359,839	50,161	161,051,477	71,898	154,706,859	69,066	183,091,755	81,739
New Mexico	1,6 0,000	714	50 ,000	223	273,515	123	154.730	69
Utah	1,700,000	759	2,000,000	893	1,312,171	585	1,183,098	528
Eastern and Southern States	1,300,000	580	1,300,000	580	415,025	185	2,437,986	1,088
All others	3,157,424	1,409	1,211,416	540	3,441,168	1.535	927,712	414
Total domestic production	287.454,538	128,326	323,056,433	144,221	327,255,788	146.096	353,504,314	157,814
From foreign ores	11,500,000	5,185	10,200,000	4,553	7,723,387	3,448	8,279,761	3,696
Total smelted	298,954,538	133,511	333,256,433	148,774	334,979,179	149,544	361,784,075	161,510
Stock, January 1st	101,000,000	45,089	76,000,000	33,929	56,000,000	25,000	58,240,000	26,000
Imports of bars, ingots and old	4,174,057	1,108	1,552,515	693	5,536,690	2,472	3,446,724	1,539
Total supply	404.128.595	180,068	410,808,948	183,396	396,515,865	177,016	423,470,799	189,049
Deduct exports	115,122,067	51,394	90,040,800	40,198	180,066,880	80,387	167,651,153	75 737
" consumption	213 006,528	91,685	264,772,148	118,201	158,208,985	70,629	176,259,646	78,687
Stock, December 31st	76,000,000	33,929	56,000,000	25,000	58,240,000	26,000	77,560,000	34,625

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

The Movement of Silver and Copper in Kernel Roasting.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: In regard to the very interesting expressions of opinion of the manner in which copper sulphide travels to the interior of lumps of ore in the 'kernel" roasting, may I point out that silver appears to do the opposite; that is to say, it concentrates to a perceptible degree on the outside of the same lumps? The movement of the copper sulphide is, to my mind, much easier to be accounted for than the movement of the metallic silver. I offer my explanation of the wanderings of the copper sulphide for what it is worth.

Partly oxidized copper sulphide has a considerable eagerness to take up more sulphur. In the interior of the lump there is sulphur and to spare for this purpose, and there is no doubt in my mind but that this chemical attraction is sufficient to cause the partly oxidized copper sulphide to actually move. We must not forget that, although the total movement is not inconsiderable, at the least an inch, that the movement is slow and gradual, taking, say, three months. Now, an inch in 90 days is little more than one-hundredth part of an inch in 24 hours, and in one minute the amount of progress, expressed in figures, would be so minute that it could not seem impossible, or extraordinary, for even a weak force to accomplish. Kernel roasting is not the only instance of movement in defiance of gravitation and inertia. In thin films of liquids, one or more insignificant and obscure factors are sufficient to conquer gravity. I might also mention the tendency of crystals of chloride of ammonium to creep up the sides of vessels containing that substance in solution, particularly noticeable and familiar in the old Leclanché batteries formerly used in electric bell installations. In kernel roasting, I take it, the movement only takes place so long as there is sufficient available sulphur in the interior of each lump to exercise a strong enough temptation. I think this latter supposition may also account for the fact that copper mattes and ores rather rich in copper do not perceptibly "kernelize," although roasted in much the same manner. I have never noticed any trace of kernels, except of imperfectly oxidized matter, in roast heap matte, and it would be interesting to hear if any other reader of the "Engineering and Mining Journal" can confirm this observation.

I can only account for an excess of metallic silver on the outside of the pieces of ore by the tendency of metallic particles to collect into globules on fusion. The temperature in the interior of a roast heap is, at some time or other during the burning of the heap, sufficient to fuse silver. Any sulphide of silver on the outside of the lump would be quickly reduced to the metallic state, and the particles there situated would gather the neighboring particles into a globule of sufficient weight for inertia to assert itself. This, I know, is a very lame explanation; but in heap burning of copper matte containing silver I have more than once observed metallic silver on the outside, distinguishable to the naked eye as globules. I have never examined critically, for the purpose of ascertaining how deeply into the mass the impoverishment of silver extends.

HENRY W. EDWARDS.

PRESCOTT, ARIZ., April 18th, 1895.

Is the Use of Cyanide of Potassium for Gold Extraction Common Property?

[The following interesting letter was received by the "Engineering and Mining Journal" from Mr. Andreoli, the well-known London chemist and electrician, immediately after the evidence to which it refers was given and before the decision of Justice Romer. The case being then awaiting judgment, we thought best to defer its publication, but inasmuch as the decision has now been given by both the British inferior courts and the Court of Appeals, and as the letter contains points not brought out in that case, it is now published.

Mr. Andreoli makes some just though very severe criticism of the practice common in England, and not unknown in America, of overawing the court by having distinguished men testify because they are distinguished, though they may be ignorant of the particular subject on which they give evidence.

Probably Mr. Andreoli will supplement this letter (which will be completed in the next issue of the "Journal") by some comment on the recent decision of the British Court of Appeals, of which we published extracts in the issue of April 20th. -ED. E. & M. J.]

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: The lawsuit instituted in England by the Cassel Gold Extracting Company against the Cyanide Gold Extracting Company is of a most extraordinary character, and the lessons it teaches us are admirably instructive.

The plaintiffs (MacArthur-Forrest) claimed to have discovered that cyanide of potassium dissolved the gold contained in its ores, and that, such being their invention, they were entitled to prevent everybody in general, and the Cyanide Gold Recovery Syndicate in particular (who use the Pilsticker process, in which auriferous ores are treated by cyanide of potassium with the aid of electricity), from using cyanide of potassium for that purpose.

Was cyanide of potassium known as a solvent not only of free metallic gold, but of the gold contained in refractory or free milling ores, before 1887, when MacArthur and Forrest patented what they call their invention?

Is the use of electricity in combination with cyanide of potassium an infringement of the Cassel Gold Extracting Company's patents?

Such were the questions to be answered, and before putting them in their proper light we must consider the arguments on which the litigant

* All import and export figures are from the reports of the United States Bureau of Statistics. The bureau reports exports of "ore" and "regulus," which meant mostly matte and black copper, in long tons, but does not state the contents in fine copper, from careful inquiry we have counted the ore or matte as averaging 55%, and ore and regulus 90% copper.

parties based their claims. A review, therefore, of the evidence given by the great and illustrious scientists who were called as witnesses is necessary, and we hope that this absurd system of putting forward the names of men of great authority in chemistry, physics and electricity, but who have no special knowledge of the particular point which is the subject of the dispute, will be, once for all, abandoned.

Take for instance, Professor Dewar, who tried to prove that electricity does not add anything to the dissolving power of cyanide of potassium.

"Before the MacArthur-Forrest patent," he says, "cyanide of potassium has never been used for commercially extracting gold."

Is this a conclusive assertion? Secondary generators or transformers which could work even on a small scale had never been made before Lucien Gaulard still Justice Kekeroich declared his patents to be null and void.

"There is nothing in common," states Professor Dewar, "between Rae's method and that of the defendants."

He admits, however, when pressed by Sir Edward Clarke, that "in each case the ore was placed in a solution of potassium cyanide, and in each case the electric current passed through the ore and in the solution, and that Rae's and the defendant's methods are in principle the same thing."

I hardly perceive the objection Professor Dewar may have in declining to go into the causes which made Rae's patent to fail, except that he could not find any reason of failure in it. Everything is rational in Rae's process and it is difficult to find fault with it.

The worst is that the learned scientist confesses that "it was not com mon knowledge to him that cyanide of potassium was effective for dissolving gold from its ores."

What for, then, are these eminent men called as witnesses if they are not competent, and do not know anything about the real point which is to be decided? What business has Professor Dewar to come and give his opinion about cyanide as a solvent of gold if he had no knowledge that cyanide was effective for dissolving gold?

I believe that Prof. Dewar wrote years ago about the "Reversal of the Spectrum of Cyanogen" in his paper published in 1881, in the Proceedings of the Royal Society, but it is quite the reverse when he speaks of cyanide and gold, and his statement is not reliable. What do you think of this declaration made by him?

"In Rae's patent there are two electrodes, and the electrodes in the first tank had nothing to do with the solution of the gold in the cyanide of potassium. There is no indication in Rae's that you could get at the solution without electricity." Professor Dewar speaks of a first tank, as if there were two tanks in Rae's process. There are two pate nts, two processes, but there is in each only one tank.

Furthermore, Rae is very clear and precise, and there is no possibility of distorting the meaning of the words he used as regards the action of cyanide. There is no excuse for Professor Dewar, whose evidence looks more like that of a lawyer than of a scientist.

It was a great disappointment to see that such an electro-chemist as Dr. G. Gore abstained from discussing this highly interesting question of the electrolysis of a cyanide of potassium solution in which the gold or silver ore, in a state of fine division, is kept in suspension, or of a mass of gold or silver ore impregnated with a cyanide of potassium solution. Dr. Gore, as an electro-metallurgist, was without exception the right man to put an end to the divagations and to the erratic statements of the incompetent or interested parties who deny the action of the electric current in connection with a cyanide of potassium solution in the treatment of auriferous ores. As a chemist, I am not sure Dr. Gore is a strong believer in the properties of cyanide of potassium as a solvent. His paper on the "Solvent Power of Cyanogen" (Proceedings of the Royal Society, Vol. 20, page 6) does not imply it, but the following passage of his "Theory and Practice of Electro-deposition" is important to note, since cyanide of potassium would not be utilized in the extraction of gold if it had but little dissolving action on the base metals:

"The affinity of cyanogen for all or nearly all the base metals is comparatively feeble. We have found by experiment that a solution of cyanide of potassium will dissolve only about one-half as much cyanide of zinc as it will of cyanide of copper."

Mr. James MacTear, cross-examined by Mr. Moulton, was asked to point out to the Court, out of all the literature of chemistry, what he considered to be the best enunciation of the property that cyanide of potassium would, cold, dissolve metallic gold, mentioned the "Circle of the Sciences." page 237, and Miller's "Chemistry," as fairly representing the state of knowledge on the subject.

I think all the literature and all the patents referring to the cyanide of potassium and its solvent action on gold have been published by me in 1890 and 1891 in "Industries" and the "Financial News," when I quoted several passages of books and especially Miller's Chemistry. I have been the first to publish articles showing that there was nothing new in the so-called discovery by MacArthur, and this is still more now my firm belief.

What I like best is his statement that the extraction of gold from ore in England cannot be called an industry on account of the absence of mines. It may be that the extraction of gold from ore is not an English industry, but it is not for want of mines, and I may add that many mines in Wales are as rich as the generality of the African mines.

A great but very specious argument is the following: Since cyanide of potassium was known as a solvent of gold, why has it not been used before, in the extraction of gold from its ores? The explanation is simple enough, as the prejudices of miners are extremely strong against any innovation. A new process is always met with skepticism, and the old ones, however imperfect they may be, remain the favorites; another insuperable prejudice was the poisonous properties of cyanide of potassium, and, finally, the great objection against its use a few years ago was its high and prohibitive price.

Sir Richard Webster made some admirable remarks, which show to what extent the prestige of a Prince of the Bar, after the prestige of the Princes of Science, may be used by ignorance to support a bad case.

"If you put," he says, "into cyanide of potassium, a small lump of gold, it will remain there for any length of time," and then the learned Q. C. goes on with sonorous and empty sentences, which are the sauce for the lump of gold.

Of course a lump of gold will not dissolve in cyanide of potassium. Neither will it dissolve in chlorine, and those who used cyanide of potassium to recover gold from its ores took great care to have them crushed and pulverized. This enormity of the lump of gold is only comparable with his aqua regia argument. "If it is question of solvency," said he triumphantly, "why has not aqua regia been taken, that being known as infinitely more a solvent than cyanide of potassium." Aqua regia, of course, dissolves gold, but, at the same time, it dissolves silver, copper and other metals. When all the constituents of a refractory gold ore are dissolved, the problem of their separation is much more complicated; this is one of the reasons why aqua regia has not been, and will never be, applied to gold-bearing ores.

Mr. Claude Vautin made a mistake when he said that in 1887 there was no method of extracting gold from cyanide of potassium solutions without the destruction of the solution. The Price system, which is based on the use of zinc in a fine state of division, was known. It had been patented in England in 1885, and the MacArthur process for precipitating by zinc in a fine state is practically an adaptation of the Price patents which I mentioned in "Industries." It is simply amazing to hear the statements of Prof. Austen Roberts, chemist of the Royal Mint, that in 1887 he had never heard of the production of gold by means of cyanide of potassium, and of Dr. G. Gore, F. R. S., that he never knew gold dissolved directly in cyanide of potassium.

Professor Crookes expressed strongly his views and declared that "the discovery of MacArthur and Forrest was that what was known to scientific men (namely that a solution of cyanide of potassium would melt gold) was enlarged to apply to gold-bearing ores practically.

It seems that there is a little discrepancy between this knowledge by scientific men of the action of cyanide of potassium and the following lines, which I extract from Professor Crookes' specification for the extraction of gold: "Chlorine is usually employed for this purpose, but it is expensive. In some cases cyanide of potassium or a soluble cyanide is used instead of chlorine to dissolve the gold. This agent has, however, a very feeble solvent action on gold, and I can imagine few cases in which a sufficient amount of gold would be dissolved to repay the expense of the solvent."

Very likely, Professor Crookes forgot all about his specification. It is, however, more probable that he changed his mind. The verse of the French poet is always true:

L'homme absurde est celui qui ne change jamais.

Lord Kelvin says that electricity has a retarding effect in depositing; that electricity does not dissolve the gold; that polarization protects the metal from the current going through it; that if the gold is in the ore, a much smaller portion of electricity will pass through."

All the Fellows of the Royal Society who were summoned to make a case for the plaintiffs have declared that they did not know that cyanide of potassium was a solvent of gold, and the natural conclusion seems superficially, if such men were ignorant of this property of cyanide how can it be supposed that it was known by other people?

Sir Henry Roscoe was very positive on this point, and he said that "Rae, in his specification does not show that he knew that gold was soluble in cyanide of potassium." I leave to any Englishman or American to read the claims where Rae is very clear and shows that he knew that cyanide of potassium would dissolve gold as, in his specification 62776, March 12th, 1867, he claims:

1. The combined action of a current of electricity and of suitable solvents or chemicals.

2. Separating gold or silver by the action of electricity.

It is a very well known fact that cyanide of potassium does not act on all sorts of ores, and that it dissolves only 60, 50 or even in some cases 30% of the gold contained in refractory ores. There are some which are untreatable by cyanide of potassium. On the contrary, the same ores when cyanide of potassium is applied in combination with electrolysis, yield an important proportion of their gold. Any person who may entertain the slightest doubt about it has only to treat by and without electrolysis two equal quantities of the same refractory ore, in the same quantity of a given cyanide of potassium solution, during the same time, and he will find that by electrolysis he gets results which the sole action of cyanide of potassium does not produce.

What did we learn from the contradictory evidence of Professor Dewar and his colleagues? Nothing. Such evidences, however, are very expensive—so at least I have been told; and I am sure that if the technical papers had been asked to give their opinion, many contributors would have volunteered without the bait of fees to tell plainly, freely and honestly what they know on the subject.

I, for one, for instance, would have referred the judge to what I published in 1890 and 1891, and to such evidence I would have added the following, which I extract from a paper by Dr. Hahn, from which it results that before 1887 the action of cyanide of potassium on gold in its ores was known and had been ascertained by metallurgists:

"Not only sulphide of copper, but also sulphide of gold or of silver, is dissolved by cyanide of potassium; and sulphide of zinc or of iron is also dissolved by a longer digestion in a strong cyanide of potassium solution.' (Verhalten der Schwefelmetallie gegen Cyankalium. [Zeitschrift für Analytische Körper, 1873, T. xii.. p. 441.)

This statement by Dr. Hahn is of considerable importance, and I must quote another one, which, although almost identical with the former, shows that what he said more than 20 years ago about the treatment of gold and silver sulphides by cyanide of potassium, referred not to laboratory experiments, but to practical applications of cyanide of potassium to the recovery of gold or silver from refractory ores:

"Cyanide of potassium is not only a good agent for dissolving silver, copper, etc., but it also dissolves several sulphides; thus, CuS (already known), AuS and AgS; ZnS and FeS are dissolved by a few macerations in strong solutions of cyanide of potassium."

A few lines further, Hahn says:

"An ore which contained 4·869 Ag as sulphide was macerated for two days in a strong cyanide of potassium solution. The washed residue contained 0·485 Ag."

His last remark refers to sulphide of gold:

"With regard to the AuS, I will, however, mention the fact that its solubility in cyanide of potassium has found a practical application for the recovery of gold in California." (Berg und Hütten Zeitung, 1870, p. 66.)

LONDON. E. ANDREOLI.

ABSTRACTS OF OFFICIAL REPORTS.

Broken Hill Proprietary Company; New South Wales.

The report of this company covers the half year ending November 30th, 1894. For that period the working account is as follows:

Bullion account, sales and shipments		£467,217
Refinery account		595,875
Ore on hand at Port Pirie		10,394
Wharfage account		882
Total		£1,064,368
Mine expenses	£179,308	
Smelter expenses	246,466	
Refinery expenses	31,426	
Freight, insurance, fuel, water, etc	223 767	
	£680,967	
Balance, profit for the half year		£383,401

The profit and loss account shows the following results for the half-year: Balance from working account, £383,401; interest, etc., £3,379; total receipts, £386,780. Against this are charged office and general expenses, £14,203; depreciation, £29,360; dividends Nos. 85–90 (6s. per share), £288,000; total, £331,563. The balance, being surplus for the half-year, was £55,217; to which is to be added £555,218, brought forward from previous account, making a total of £600,435 surplus at the close of the half-year.

The total amount of ore treated, including 2,146 tons flue dust, was 328,095 tons, producing 6,767,056 oz. silver, 23,956 tons lead, and 1,125 tons copper matte, containing 334 tons of copper. The ore treated in the furnaces was 290,222 tons; passed through amalgamating plant, 13,967 tons; passed through leaching plant, 19,839 tons; passed through concentrating plant, 4,833 tons, producing 766 tons concentrates and 4,067 tons tailings. Of the total silver obtained, 6,117,370 oz. came from the lead produced; 299,286 oz. from the amalgamation plant; 173,546 oz. from the leaching plant, and 179,854 oz. from the copper matte made in the furnaces.

The average price obtained for silver was 31⅛d. per ounce, and for lead £9 12s. per ton. In the preceding half-year the averages were 33 1/16d. and £9 15s. 10d.

An interesting table gives the results for each half year since the company began operations in 1885. From it we give below the results for the half-year included in the report and for the whole period of 9¼ years. The average costs have been reduced to American currency, but the totals are in sterling.

	Half-year.	Total.
Ore treated	325.949 tons	2,144,026 tons.
Silver produced	6,757,056 oz.	65,282,472 oz.
Lead produced	23,956 tons.	258,538 tons.
Receipts	£1,053,092	£13,087,041
Expenses	709,875	7,103,161
Profit	343,217	5,983,880
Depreciation account	29,360	375,107
Construction account	24,575	642,096
Reserve fund	.....	125,000
Dividend paid	288,000	5,764,660
Value per ton of ore treated	$15.52	$29.28
Cost " " "	10.46	15.84
Profit " " "	5.06	13.44

Depreciation charges are included in the expenses as given in the table. The average yield of silver per ton was 20·7 oz. for the half-year, and 30·5 oz. for the whole period. A comparison of the figures will show that the yield of the last half-year was below the average, but the costs were also reduced, leaving a fair profit.

The directors' report says: "Work in the refinery department has again proved to be of the most satisfactory nature, the results obtained demonstrating the distinct advantage that will accrue to the company when the whole of the bullion now produced is refined at the company's works, the extension of which is being pushed forward as rapidly as possible. The operation of refining has been considerably improved by a more complete and elaborate system of working, which, although involving additional expense, more than repays the extra outlay by the results obtained. By this means the unavoidable loss of silver and lead which occurs in the treatment of the bullion has been reduced by one-half in each instance, and, in addition, nearly double the amount of gold has been recovered in the process. The bullion treated was 11,070 tons. The production was 2,737½ fine oz. gold, and 3,667,555 oz. silver; the cost was $6.89 per ton of bullion treated.

"The directors have completed arrangements during the half-year with the British Broken Hill Proprietary Company for the purchase from them of their concentrating plant, inclusive of the building. The greater part of this is required for that portion of the concentrating plant erected for the treatment of sulphides, and a contract has been let for its removal, which is being pushed on with all speed, and should be completed in two or three months. That section of the plant intended for the treatment of the carbonates is now almost completed. The work done so far, however, has been of a somewhat preliminary character, so that as yet insufficient data is to hand to arrive at any reliable result as to costs. The reports received up to the present show that the operation may be considered satisfactory.

"In the mine open cut operations have been pushed along vigorously for the period under review, as will appear from the increased tonnage of ore obtained from this source, and the quarrying is getting much deeper, and more into the ore bodies.

"A considerable proportion of crude sulphides (some 800 to 1,000 tons) are now being treated weekly in the furnaces at the mine, which amount may be gradually increased. This will probably augment the quantity of copper matte produced, and the directors are giving full consideration as to the most satisfactory method of dealing with the realization of this material.

"A small iron foundry has been erected upon the north slag dump, and is proving of service in utilizing to a more profitable extent the waste cast-iron which hitherto had to be sent to local foundries to be re-cast when required. A diamond drill has been purchased, and is being placed in position in McBryde shaft, with the view of testing the deeper ground.

"The late heavy rains at the Barrier have replenished the company's reserves of water considerably, the benefit of which should be felt during the coming six months, a large proportion of the requirements during the past half-year having to be obtained from outside sources."

Concerning the future prospects of this great property, there has been much discussion of late, and the following statements of Mr. John Howell, the general manager, will be found of special interest: "A question has been raised as to whether it is advisable to use large quantities of the silicious and manganic iron smelting ores in our smelting furnaces, with a less quantity of limestone for flux, or to use a greater quantity of limestone, and reserve a portion of the iron ores for future use in connection with the treatment of sulphide ores. I may say, in dealing with this matter, that of all the oxidized ores remaining in the mine at the present time there is an excess of the several characters of iron ores over all other characters of oxidized ores put together; and, further, our silicious iron ores, carrying as they do on an average but little more iron and manganese than is required to flux themselves, constitute one of the most important silver and lead-producing smelting ores at the present moment. By a free use of manganic iron fluxing ores (all of which carry some silver and a good percentage of lead) we make a fast running and cheap smelting mixture, to which may be attributed more than to all other causes put together the great reduction in smelting costs during the past half-year. I would further state that the free and liberal use of these iron ores is, aside from their own iron fluxing quality, practically indispensable in our smelting operations at the present time, for the reason that it is from these iron ores that we now obtain the bulk of the lead which it is necessary to have for economical smelting. It is, I am sure, well known that our carbonate of lead fluxing ores are getting scarce, and, in my opinion, the company is especially fortunate in having in this mine in such large quantities a class of ore which contains, in the best possible combination, such a large percentage of lead and iron fluxing properties. It is what can only be regarded as a remarkable fact that, along the whole line of the lode, it is alone within the bounds of the three 40-acre blocks constituting the Broken Hill Proprietary Mine that this class of material is to be found in any quantity. There is nothing, on the other hand, in favor of reserving these manganic iron ores for future treatment in conjunction with the sulphides. Not but that they would be desirable ores to mix with the sulphides, but it is now a pretty well established fact that the sulphide ores of these mines will not be treated alone in large quantities on the Barrier. It is quite evident that the sulphide ores of the Proprietary mine cannot possibly be successfully and profitably reduced, alone, by direct treatment in blast furnaces. A preliminary dressing and concentrating will have to be resorted to, to rid the sulphides of a portion of their zinc, silica and other objectionable ingredients before they can with success be subjected to a heat-reducing process. This preliminary dressing and concentrating can, and no doubt will, be done on the Barrier, but the smelting of the concentrated material, which will require a good deal of fuel and manipulation, will have to be carried out at the seaboard, where fuel, labor, limestone, iron and other important requisites are cheaper than at Broken Hill. In that case, it would not pay us to send our low-grade manganic iron ores away, for first-class iron ore can be purchased at Port Pirie at the present time, delivered at the smelting works, for possibly about what it would cost to mine our manganic iron ore here. (It must be remembered that the iron ore we are sending to Port Pirie at present carries a good percentage of silver and lead). Therefore, it is in the best interests of the company to use its silicious and manganic iron ores in such proportions as will reduce the cost of smelting to the lowest point, and give us the necessary supply of lead, for which we must look to the iron ores in a large measure hereafter. It is not only advisable that we should use a large percentage of these iron ores in order to reduce the cost of smelting and to increase the reducing capacity of the furnaces, but it is absolutely necessary to do so (1) to get the lead we require for fluxing purposes, and (2) to obtain the silver the iron ores carry. Whatever benefits would be derivable from blending these iron ores with our concentrated sulphides, those benefits and profits would be very small compared with what we are now receiving from the free and liberal use of our iron ores combined with our dry silicious oxidized ores. In connection with the foregoing, the following figures are supplied, the same representing the general average analysis and assay of the silicious iron and iron fluxing ores taken from the open cuts during the half-year, compiled day by day from rough 'grab' samples: Silicious iron—Lead, 14·715%; silver, 24·030 oz.; iron, 15·618%; manganese, 17·286%. Iron flux—Lead, 15·153%; silver, 3·214 oz.; iron, 18·253%; manganese, 23·547%.

"During the half year we have treated several lots of the sulphide ores by concentration in an experimental plant erected for that purpose, and the results were favorable. We obtained, on an average, from a little over three tons of crude sulphide ore, one ton of concentrated material, which gave an assay value of from 50 to 65% of lead, from 20 to 28 oz. of silver, and from 6 to 8½% of zinc per ton. A large quantity of this concentrated material could be successfully reduced, without desulphurization or any other preliminary treatment, directly in our smelters in combination with our dry silicious oxidized ores, but if the concentrated sulphides had to be treated alone they would have to be subjected to a desulphurizing and oxidizing treatment in reverberatory or other suitable furnaces before they could be successfully reduced in blast furnaces. At present we are smelting from 800 to 1,000 tons of crude sulphides per week, blended with our oxidized ores. The new concentrating plant erected during the past half year has been designed, one-half for the treatment of oxidized and carbonate ores, and the other for sulphides. The former half is finished, with the exception of some slime-dressing jiggers which we are now putting in. The building and machinery foundations for the sulphide half are also completed, and the purchase of the British Company's concentrating plant will afford most of the machinery and other material necessary to complete the sulphide half, which will be pushed on as fast as possible.

"In a special report published with my ordinary report for the half-year ending May 31st, 1892, I gave, after very careful investigation, as an estimate of the quantity of ore remaining in the mine at that time, 2,000,000 tons of payable oxidized smelting ores, which would keep 25 smelting furnaces running at the rate we were then smelting for between four and five years. Two and a half years have since elapsed, and we have mined and treated during that period about 1,280,000 tons. We have, however, within the time mentioned, discovered two isolated bodies of ore which, at the time of the preparation of the estimate, were not known to exist,

and these discoveries have added somewhat to my former estimate: so that it is safe to say we have yet about 1,000,000 tons of payable oxidized ores left in the mine of a character and value suitable for direct treatment in the principal metallurgical works. Besides this, we have a large quantity of concentrating ore, which can be reduced to a profitable smelting ore, and these quantities, together with the concentrated sulphides that will be obtained from the new concentrating plant, enable us safely to say that we have remaining in the mine at the present time sufficient oxidized ores (with what sulphide concentrates can be produced) to keep all our metallurgical plants running, at the rate we are now working, for two years, with still a fair prospect of finding other isolated ore bodies outside of the main lode which are not taken into the foregoing calculation. The ores remaining will not contain as high a percentage of silver and lead as the ores heretofore treated: still, there is a considerable quantity of high-grade silver ore remaining in the mine, and the open cuts will produce a better quality of all characters of ores in the future than they have done in the past. The ore, however, which will be produced from the underground workings will not be so good as it has been. During the past two years we have, in addition to doing a great deal of heavy construction and other extra and expensive work, and paying dividends, created a large cash surplus, besides having in reserve and paid for considerable stocks of coke and other expensive supplies; and in addition to the foregoing, we have on hand at Port Pirie about 11,000 tons of ore on which the cost of mining, transport and handling has been paid, and there is also about 50,000 tons of concentrating, chloridizing, and smelting ore piled up on the surface of the mine, on which the cost of mining and placing in reserve has been defrayed. From the foregoing—and when it is considered that we have now got through with very nearly all our expensive construction and other extra work—with the mine, both in the open cuts and underground, in the best condition it ever has been, and the metallurgical plants all in good order, and with the great reductions in the cost of mining and treating the ores, which have been brought about during the past half-year, we can work a much lower grade of ore than we have been working. In estimating the quantity of oxidized ores remaining in the mine, I may say I am dealing only with the quality and character of ores that will pay ordinary expenses and dividends at our reduced cost of mining and treatment, with silver and lead at the average price which has obtained during the past half-year. Our mining, both above and below ground, is now nearly all done under the contract system, which is working satisfactorily."

TWO INTERESTING CASES OF ABNORMAL CONDITION IN PIG IRON.

By T. W. Hogg.*

Everyone who has frequent occasion to examine pig iron is aware of serious local variations in composition in different parts of the pig, and so far back as 1881 I described an example of hematite pig, showing variations in the sulphur from 0.055% to 0.154%. Since this time many cases have been published.

I have just recently come across a pig showing an extraordinary variation, and as it has been examined very thoroughly the results are brought together here, as the careful study of them, with the example to follow, cannot fail to make one hesitate to draw any definite conclusions at present with regard to local variations in solidifying masses.

This pig shows for nearly one-half of its area that peculiar fine grained texture so often indicative of iron of poor quality. This fine grained texture, however, is not always due to the same cause, and in the present case both the purest and the most impure portions occur within it at one section of the pig, and in other sections the most impure metal is outside of the fine grained portion. The results of the sulphur determinations from the different samples of pig were as follows: 0·17, 0·088, 0·118, 0·015, 0·044, 0·096, 0·17, 0·028, 0·05, 0·13, 0·13, 0·019, 0·086, 0·10, 0·10, 0.022.

In one section taken in different parts of the pig, complete analyses were made as follows: Manganese, 1·73, 2·02, 1·80, 1·76; combined carbon, 0·77, 0·77, graphite carbon, 3·39, 3·17; silicon, 1·63, 1·63, 1·63, 1·63; sulphur, 0·17, 0·088, 0·118, 0·015; phosphorus, 0·04, 0·04, 0·036, 0·035.

Additional determinations of the sulphur were made in the first section proceeding round the curve of the pig; the percentage of sulphur was as follows: 0·11, 0·12, 0·048, 0·018.

The lowest sulphur determination is 0·015% and the highest 0·17%. The borings were all taken by means of a ¼-in. drill, and in mentioning this perhaps it may be of some interest to stop for a moment to consider a highly important omission in most of the work which has been done in investigations of this kind.

It must be apparent that in solidifying masses of small dimensions the area upon the section containing the segregated impurities cannot be very great. In a large ingot of 30 in. diameter, at its worst part the segregated matters are principally contained within a diameter of 2 in., and it is highly probable that this diameter gradually decreases as we proceed toward the bottom of the ingot. As a rule evidence of segregation is soon lost, but may not this evidence be lost simply because of the diameter of the impure vein being reduced and the diameter of the drill being sufficiently great to take in enough of the purer mother metal to hide it completely?

From these observations it is evident that until we devise analytical methods capable of giving reliable results upon small quantities of material, we must not conclude that segregation does not take place in small ingots to so great an extent as in the large ones. If a series of observations be made upon an ingot 30 in. in diameter with a ¼-in. drill, a corresponding series of observations upon an ingot 5 in. in diameter would require the drill to be $\frac{1}{32}$ of an inch, and I need scarcely say that it would have to be most accurately centered. Reckless drilling is a prolific source of heterogeneous information.†

Returning now to our sample of pig iron, on reference to the analyses given it will be seen that we have here a case of only one element, the sulphur, varying to a great extent. The manganese was determined with the greatest ease, as it is so well known that this element has the property of causing sulphur to segregate, yet the difference found does not correspond to what we might have expected. On a previous occasion I examined one of these pigs showing this peculiar fine grained appearance, and found differences in the carbon only, and in all the hematite pigs I have examined I have never found any great variation in the proportion of phosphorus. Sulphur seems to be the most erratic of all. Careful inspection of the fracture of the pig which I have been describing fails to reveal anything indicative of a portion of it consisting of extremely pure iron. In the second specimen of abnormal pig we have an unusual condition readily apparent to the eye; a portion of the section shows the presence of a layer of considerable thickness of white iron surrounded on all sides by grey. It is not difficult to understand that if we had an iron very liable to chill that such a condition might and does frequently exist, of the white iron being immediately on the outside—in this specimen, however, it is grey iron that we have on the outside. The contour of this white enclosure varies along the pig until it finally disappears about 6 in. from the end. I have had this white enclosure carefully sawn out from the first section, and the analysis of this and the grey surrounding pig is given in the following table:

	Iron (by difference).	Manganese.	Carbon (combined).	Carbon (graphite).	Silicon.	Sulphur.	Phosphorus.	Copper.	Total.
White.....	93·267	1·63	3·88	0·45	0·65	0·020	0·039	0·064	100·00
Grey.....	92·768	1·60	0·98	3·68	0·85	0·024	0·054	0·064	100·00

The grey portion shows the highest total carbon I have ever met with in pig iron; the so-called impurities—sulphur and phosphorus—are practically identical in each, and there is only a slight difference in the proportion of silicon and carbon; of course the great difference is in the proportions of combined and graphitic carbon.

It does not seem easy to satisfactorily explain the cause of the formation of this curious condition. Possibly the iron may be a critical one; that is, it is exceedingly liable to chill, and the first portion may run into the mold slowly enough to solidify, and then there is a rush of hot metal which surrounds it and cools slowly enough to enable the greater portion of carbon to separate as graphite. Where the white iron occurs in the center the condition may have resulted from cementation as in a specimen of remelted Swedish grey pig iron, which has a portion of white in the center, which could hardly be found in any other way.

While determining the silicon in this pig iron, I noticed a great difference in the bulk of the silica upon dissolving in dilute hydrochloric acid and thought it of sufficient interest to ascertain the relative proportions soluble and insoluble in this acid. These were as follows: Silicon insoluble in hydrochloric acid, grey, 0·16; white, 0·34; silicon soluble in hydrochloric acid, grey, 0·69; white, 0 31; total, grey, 0·85; white, 5·65. After getting this decided evidence of varying condition of silicon, I also determined in the same way the proportion of silicon soluble and insoluble in the portion of the first sample of abnormal pig iron giving the highest and lowest sulphur. In a sample containing 0·13 sulphur there was 0·90 insoluble silicon and 0·86 soluble silicon, and in a sample containing 0·19 sulphur, 0·91 insoluble silicon, 0·86 soluble silicon.

Silicon has been frequently suspected to be able to exist in different conditions in its alloys with iron. So far as the evidence has gone no one has ever given definite proof of the occurrence of this element in its graphitoidal condition, but, apart from this may it not be capable of existing in two other conditions analogous to that of carbon in hardened and slowly cooled steel, conditions which are so certain but so difficult to give unquestionable chemical evidence of? Considering the difficulties in the way of thoroughly proving the case for carbon, it would be important to know what special reactions might be taken to indicate any special condition the silicon might take up. While experimenting upon alloys containing larger quantities of silicon I obtained a somewhat remarkable result by submitting very finely powdered siliceous spiegel containining 10 per cent. silicon to the prolonged action of 1·2 nitric acid in the cold, and at the end of four weeks the silicon seemed to be completely converted into a buff-colored residue which possesses the interesting property of turning almost quite black if heated out of contact with air. The alloy yielded 17 per cent. of this residue and the quantity of silica in it was found to be 76·41, the remainder being mainly combined water. A higher alloy containing 15 per cent. silicon obstinately refused to be decomposed under the same conditions.

These differences of solubility of the silicon are not accidental. May they not point towards the fact that, excluding the graphitic state, silicon, like carbon, may exist in more than one other condition?

* Abstract of a paper read before the Newcastle Section of the English Chemical Society.

† Howe, Metallurgy of Steel, p. 205.

Coal near Madras.—The idea that coal may be found in the South of India is, the "Times of India" points out, by no means a new one. During the sixties and early seventies it was constantly being put forward, and the officers of the Geological Survey were so frequently sent upon bootless errands for the confirmation of so-called discoveries, that a learned superintendent, so it is said, was at length aggravated into binding himself by a dreadful oath that he would eat every bit of indigenous coal that might be found to the south of the Godavery. But further researches have, in the meantime, disclosed facts which prove that the existence of coalfields in the Madras Presidency is anything but a geological impossibility, and in a pamphlet which is before us, Mr. Leighton gives some very cogent reasons for believing that carboniferous deposits will be found in the immediate neighborhood of Madras itself. Such a declaration naturally fails at first to command implicit belief, and yet it appears to be based upon sound hypothesis. What has caused the coast at the point where the southern capital is situated to bulge out into the Bay of Bengal? A ridge of metamorphic rock, Mr. Leighton replies, which formed the eastern side af a gorge along which an ancient river flowed to the sea. The theory is of interest in connection with the recent correlation of the rocks of Peninsular India with those of South Africa. The clays and sandstones which this river deposited have only recently been brought to light by means of an artesian boring, but they appear to be identically the same as the Barakurs. No coal and no outcrop have yet been found, but the whole valley has been completely filled up with more recent geological strata, including alluvial deposits of considerable thickness. Mr. Leighton has obtained very liberal prospecting and mining rights, and has now launched a project for searching the seams which he believes that nature has temporarily hidden from view.

MORITZ FERDINAND GAETZSCHMANN.*

By R. W. Raymond.

By the death of Bergrath Prof. M. F. Gaetzschmann, which occurred on the 18th of February, in the 95th year of his age, at his lifelong home in Freiberg, Saxony, the Institute loses one of its earliest and most eminent honorary members, and the profession of mining and engineering one of its most influential and useful representatives.

Born with the century, at Leipzig, he entered the Freiberg Mining Academy as a student in 1821. After graduation he became a lecturer and instructor of mine surveying, and was afterwards a mining official at Schmeeberg. In 1834 he was called again to Freiberg, where he was until 1836, lecturer on mine engineering, and from 1836 to 1871 occupied the chair as Professor in that department, retiring in the latter year from active labor, though not surrendering his interest in the work to which his life had been devoted, or in the numerous pupils whom he had trained. In 1862 he received, in recognition of his distinguished services, the title of Bergrath.

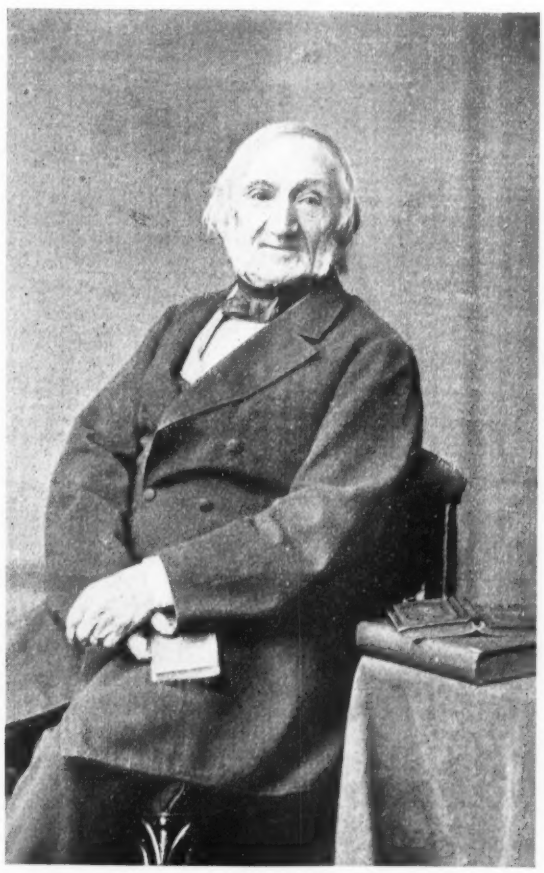
Besides his continuous labors as a teacher (of which I shall have more to say) he enriched the technical literature of mining by many valuable contributions, most of which were intended to be parts of a complete text-book, never finished. The first was an essay on mine-masonry, which appeared in 1836. In 1846 he published what was to be the third part of his great work, a treatise on methods of exploitation (Bergmannische Gewinnungsarbeiten); and in 1856 the first part, namely, a volume devoted to the subject of prospecting (Die Auf-und Untersuchung von Lagerstatten nutzbarer Mineralien). This book has remained for nearly 40 years unsurpassed as a trustworthy and helpful authority. Another part of the projected cyclopedia was completed in 1872, and dealt with the mechanical concentration of ores. Of his various other literary activities, as editor of the Freiberg Jahrbuch, as a director of the Academy library, and as author of sundry technical and historical monographs, I will not attempt to give a full account. But his statistical compilation in two volumes (1852) of the product of the Freiberg district from 1530 to 1850, and his admirable little pocket glossary (1852) of mining terms, deserves special notice. And I must not omit to mention the fact that he was the first to conduct the admirable practical preparatory course in mining, established at Freiberg in 1846. This position, in addition to his work as a lecturer and instructor, brought him into personal relations with the students, which secured for him in a high degree their affection and esteem.

Diminutive in stature, but full of enthusiasm, activity and lively humor, he seemed to his pupils like a friendly gnome, conducting them through his underground realm, and explaining its mysteries, with merry delight. After they had left the Academy, he followed them with interest throughout the world, corresponding with them, advising and inquiring concerning their varied work, and manifesting an intelligent sympathy with the progress of the art in which he had first instructed them. I treasure many letters in his queer handwriting, not easy to decipher, but always worth the trouble it cost me to make them out, and I do not doubt that others of his pupils can say the same.

His lectures were characterized by abundant erudition, under the control of practical judgment He was thoroughly familiar with the actual work, as well as the literature, of mining; and the tendency of his instruction was to make mining engineers, rather than learned commentators and critics.

These features characterized to a large extent the whole circle of great teachers who gave to Freiberg its influence and fame, and of whom Gaetzschmann was the last survivor. Such men as Weisbach, Cotta, Breithaupt, Schurer, and their associates could not have been easily matched for special ability, but the extraordinary reputation which the Freiberg Academy acquired under their hands was due also to a combination of equally unusual conditions. In the first place, they were all in touch with the practical art of which they taught the theoretical elements; and their scientific activity, by word or pen, was directed to the promotion of that art Hence the text-books which they produced were mightily helpful and heartily welcome to practitioners as well as theorists. Again, they wrought in an almost virgin field, and without the numerous well-equipped competitors who now (largely as a result of their labors) occupy it. The mines and metallurgical works of the Erzgebirge led the world in their perfection of method and administration, and reinforced with impressive object-lessons the instruction of the Academy. Moreover, the intimate relations between the professors and their pupils permitted an amount of direct personal training not often possible in such institutions; and the result was a thoroughness of education not always guaranteed by the degree of a technical school. To these causes may be ascribed the exceptional effect which Freiberg has produced upon the arts of mining and metallurgy in all civilized countries. There are still great teachers and investigators in her faculty—such men as Richter and Ledebur, or the lamented Stelzner, who has just been removed by death, have had no superiors in the present generation. But they do not stand in such conditions as did their illustrious predecessors; and they cannot reproduce the unique glory to which those conditions essentially contributed.

To that brilliant chapter in the history of mining and its kindred arts, the departure of Gaetzschmann, the last survivor of the old regime, writes "Finis," and we close the book.



MORITZ FERDINAND GAETZSCHMANN.

* Presented at the session of the Florida meeting of the American Institute of Mining Engineers, held at Tampa Bay, March 29, 1895.

New Machinery for Diamond Mining.—A new plant for treating diamond blue ground has been designed by T. G. McLelland, general manager of the New Gordon Company, South Africa, and the machinery is now being erected in England. According to this plan the blue ground will be brought from the mine in the trucks, and raised to a height of about 38 ft. above the ground level. The trucks are pushed along a bridge and discharged into grizzlies. The small stuff passing through is led direct by means of shoots to the first pair of rolls, and the larger stuff passing over the grizzly is dealt with by crushers, which discharge into a shoot immediately above the first rolls. After the ground has been dealt with in the first rolls, it passes into four pulsators, the plungers of which work at a high speed. The heavy stuff descends through the sieves, being carried away by spiral conveyers to a deposit bin, while the light stuff is washed over the top and led by shoots into the second set of rolls, which are arranged to crush slightly smaller than the first. These latter shoots also serve the purpose of draining away the water and fine mud, which can thus pass direct to the settling tanks. After the second crushing, the ground is lifted by two elevators and discharged into a second series of four pulsators, similar in design and size to the first. The heavy particles here again descend through the boxes and are led away by spiral conveyers to the deposit bin, while the lighter parts are taken over screening shoots and crushed between two pairs of rolls. After this the ground is pulsated in six boxes, where it undergoes the same treatment as before, the overflow being led to a long settling tank or launder as tailings. A wash-up machine is included with this gear, which contains some novel features. There are five pulsators, and at the foot of each box is a closed-in elevator, lifting the deposit clear of the water-level and discharging into locked-up boxes. The water and slum passing over the pulsator is caught in a launder running in front of the boxes, and the water lifted again to the level of the pulsators by means of a scoop wheel, while the slum is drawn off in a similar manner as described for the main launder. The principal value of the process consists in the reduction of the cost of production; but an important point gained also is that it will enable the mine manager to test daily the diamondiferous quality of the ground he is working. With regard to the cost of production, it is claimed that the expenses will be reduced from the present rate of from 10s. to 12s. per load to about 4s. 3d.

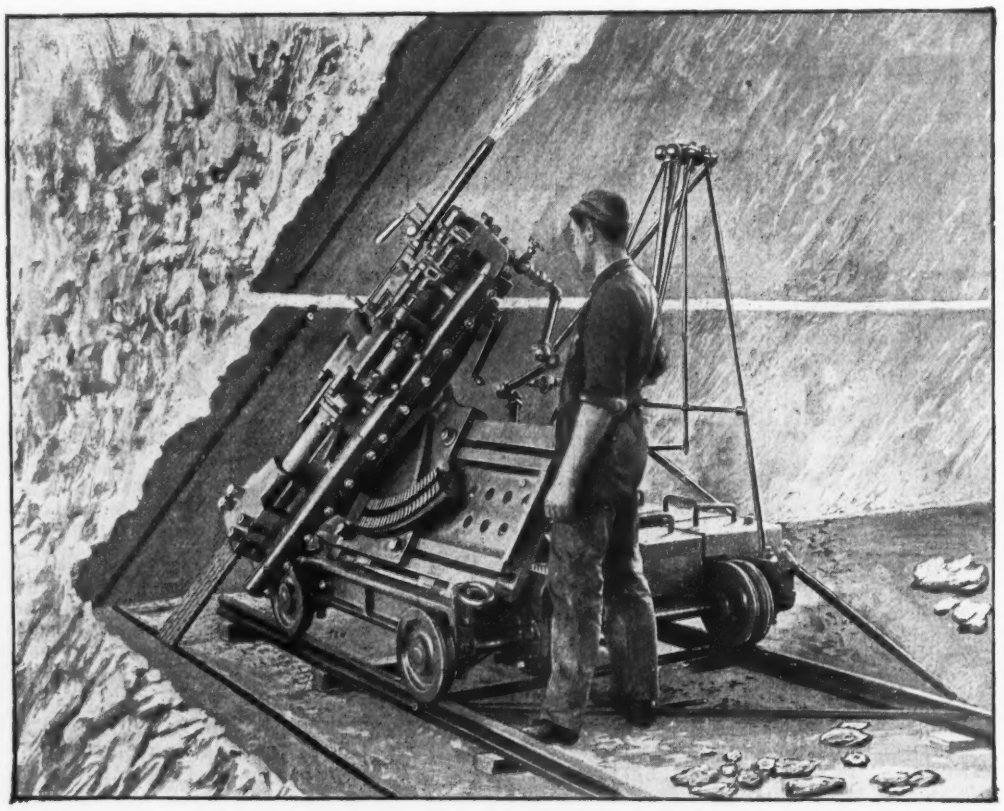
Data on Road Traffic in London.—Some interesting data have been obtained recently concerning accidents to road traffic in the busiest thoroughfare of London. In a single day, from 8 o'clock a. m, to 8 p. m., some 12,366 horses and vehicles passed along Cheapside, and 5,350 along Cannon street. During 50 days' observation it was found that 542 accidents took place on wood pavement, 719 on granite and 1,066 on asphalt.

IMPROVEMENTS IN QUARRYING MACHINERY.

The advances which have been made in methods of quarrying have been quite as great as in mining and other industries. As described by William L. Saunders in the "Mineral Industry," Vol. II., the channeling machine was the first mechanical appliance designed to aid in producing blocks of more or less regular size and shape. Following this came the Knox system of blasting, by which the force of the charge was made to act in a prescribed direction. Then the Githens system was introduced, which was simply a modification of the former one, drilling holes of the desired shape in one operation instead of two as before. Various other machines have been designed for quarry service, each being especially adapted to certain conditions of working or results required.

The accompanying illustrations show two forms of channeling machines manufactured by the Ingersoll-Sergeant Drill Company, New York, and operated by compressed air or steam. The upright machine is used for angular or vertical cuttings in marble and other quarries when the floor is to be enlarged, or for putting in head cuts, tunneling, cutting out corners and similar work. It is light in weight and readily moved about, and made for use with either steam or compressed air, these being supplied by means of a jointed pipe, shown in the illustration.

The undercutting channeler has been used with marked success in marble, slate and serpentine quarries where there are no free beds, and where the rift or cleavage of the stone runs in a vertical direction and is so pronounced as to render this system of quarrying necessary. The stone may split well from the bench, but will run off badly when an attempt is made to break, loft or cap it from the face, in which case the bar channeler, or our regular track channeler, is used for making the end or vertical cuts. The stone is undercut 5 to 7 ft., and then can be broken to dimensions, from the top, with plugs and feathers, or other means.



IMPROVED STONE CHANNELING MACHINE DOING CORNER AND ANGLE WORK IN QUARRIES.

This channeling machine consists of one of the larger sizes of rock drills, somewhat modified in general construction, carried horizontally on a strong car, which runs on a light track, as shown. The car is moved back and forth at any desired speed by means of gearing connecting the axles with an independent three-cylinder engine of the same pattern as is used on the regular track channeler. One man is sufficient to operate and move it in most cases. Provision is made for a variation from a horizontal channel line, the quadrant allowing of sufficient adjustment for following a dipping or pitching vein. The channeling engine can be attached to either end of the car for cutting up close into the corners. The machine will drill its own holes for starting the cut.

In its new catalogue of rock drills and quarrying machines, the Ingersoll-Sergeant Drill Company refers to the use of compressed air as applied to quarry work, describing the advantages secured from it. Since air compressors have been so greatly improved, it is claimed that there is secured at the drill and of the transmitting pipe 88% net efficiency, while under the same conditions steam would give about 40%.

The following figures, given by F. C. Neeb, a quarry operator in Ohio, show comparative results between hand, steam and compressed air drilling and reaming:

By Hand—Cost of drilling and reaming, month of September, 1891: 4,447 ft. of top hole and 1,791 ft. of side hole; cost, $535.16; cost per foot, 8·6c.; total number of feet drilled, 6,238.

With Steam—Cost of drilling and reaming, month of September, 1892: 5,629 ft. on top hole and 1,874 ft. of side hole; cost, $438. Total number of feet drilled, 7,503; cost per foot, 6·5c.

With Compressed Air—Cost of drilling and reaming, month of September, 1893: 8,007 ft. of top hole and 2,394 ft. of side hole; cost, $449.50. Total number of feet drilled, 10,401; cost per foot, 4·3c.

The results shown above mean a great deal more than is apparent on their face. All blacksmith work, all fuel and oil for hoists, pumps, etc., are charged against the drills, so the figures can hardly be considered as favoring them.

It will be noted that the figures are for reamed holes, ready for blasting. Taking out the cost of reaming and making a fair allowance for the oil, coal, boiler attendance, etc., properly chargeable against the hoists, pumps, etc., since they ran full time and the drills but 17 days (for four drills), the cost of drilling alone is about 7·6c. per foot by hand, as against 2½c. by air, or a saving of 5·1c. in favor of air over hand work, and 2·2c. per foot in favor of air over steam drilling.

The amount of drilling and reaming done by air in September, 1893, would have cost, if done by hand, 10,401 ft. at 8·6c. per foot, $894.48; if done with steam, 10,401 ft., at 6·5c. per foot, $676.06; actual cost with air was $449.50, a saving in favor of air over steam in one month of $226.56.

THE AMMON MINES, FERGUS COUNTY, MONT.

Written for the Engineering and Mining Journal by H. C. Freeman, M. E.

Gilt Edge, Fergus County, Mont., is a small mining town that has grown up in the last two years from the development of the Gilt Edge and Chickadee mines two miles distant. The town is 14 or 15 miles northeast of Lewistown, and five miles south of Maiden, near the old Spotted Horse mine.

The mountains here have a northeast course, and are a part of the Judith range. The Gilt Edge and Chickadee mines are near the foot of the mountain on the southeast slope. The gold ore is found in a "blanket vein" which lies but a few feet below the surface and follows the slope of the mountain to the base, excepting where gulches have cut down the face to a lower depth.

The mining is done by starting in on one side of a gulch at the ledge of an outcrop, drifting on a level, and stoping up the slope following the ore, which is irregularly distributed but constant. The miner follows it regardless of any form or regularity more than to keep an opening behind him, and connection with a chute to convey the ore to the main drift.

The formation is a sheet of porphyry intercalated in a shaley limestone and clay band between ledges of solid limestone, as an overflow from a porphyry dyke on the northwest, near or at the top of the range. The effect of this porphyry intrusion has been to frequently disturb the limestone ledges and crowd masses of it forward, the ore in such cases surrounding large and small masses, the limestone appearing like a "horse" in vein mining. In one case noticed the mass of limestone was so large, and apparently not displaced, the ore body appeared as two beds with limestone between. Where the limestone is displaced and crowded forward by the porphyry, irregular masses, large and small, are found mixed with masses of porphyry and the gold ore irregularly surrounding both.

The intrusion of the porphyry appears to have been in softer material, forming a bedding to the upper limestone, taking its place and lifting up up this limestone.

Where there is no dislocation more than the insinuation of the porphyry between the ledges, there is a regular, thin, laminated limestone lying next under the porphyry, and which is good ore of $16 to $40 per ton,

occasionally higher. The gold lies in the thin joints of the lamination, sometimes very rich.

The gold has undoubtedly been deposited from solution which has come up the side of the dyke at the contact and followed the under side of the porphyry sheet along the overflow.

Lumps of porphyry, much discolored with iron oxide and mixed in with lumps of limestone taken from places where the limestone had been crushed and moved out of place, were assayed. Although their appearance indicated pay ore, the assays showed them to be low grade, and probably all the gold was in the adhering clay. The ore is well oxidized, rarely any pyrite seen, and the gold is very fine.

Where there is a semblance of regularity, this thin laminated limestone is in place, next under the porphyry sheet, 18 to 24 in. thick, then a decomposed brown, softer material, somewhat aluminous, of about 2 ft., and varying in value averaging about $10 per ton ; below this a band of clayey material of about $3 per ton down to a trace of gold.

For the most part this regularity is disturbed with a corresponding unequal distribution of the gold ore in large and small deposits.

The miners follow the ore in these changes, which, on working, often chambers out into large irregular rooms 10 to 15 ft. high. In some cases it seems as if by the porphyry flow, where it had broken up the structure and pushed it forward out of place, a dam had been formed on the lower side, which partially stayed the subsequent flow of the gold solution, and it had penetrated farther into the surrounding rock, and also left richer deposits.

Across the gulch, in another mine about 400 ft. distant, a single room of this kind is said to have furnished $18.000 worth of ore. The room was about 12 to 15 ft. wide, 30 ft. long by 10 to 12 ft. high. In all the assays there was so little silver it was added for inquartation.

The mining is easy, and in working the soft places, which are in the larger part of the rooms, one man can knock down and handle 10 tons a day. In the narrower work much limestone is encountered, requiring drill and dynamite.

The milling plant, nearly two miles down the valley from the mines, is built for the cyanide process.

A crusher delivers the ore to a modified Chilian mill, from which it is elevated to a storage bin, and spouted from this to a car, which runs on an overhead track and dumps into the leaching tanks.

This Chilian mill has a false bed of perforated cast-iron plates, through which the ground material falls. It leaves part of the material too coarse and with far too much slimes. The company intends replacing it with a set of double rolls and cylindrical screens which will give a more uniform product and less fines, and render the leaching part more satisfactory.

The leaching tanks of wood, nine in number, are about 12 ft. diameter and 2½ ft. inside depth, with the usual false bottom covered with burlap for filtering. Each tank holds about 10 tons of ore with a present capacity of 30 tons a day for the nine tanks. There are, besides, the necessary tanks for making and storage of stock solution, and tank for weak solution. One force pump connects the system together.

The solution of cyanide of potassium used is ½ of one per cent., and the extraction for the month of January last on a trial run was about 65 to 75% for the first two weeks, with an average ore run into the tanks of $12 to $16 per ton. The last two weeks of the month there was an improvement, the last week showing an extraction of 91 to nearly 92%, and the ore ranged about $10 to $12 per ton as run into the tanks.

The zinc boxes are about 15 ft. long, with the standard size divisions, two 15-ft. boxes coupled endways by a pipe. In the January run only five divisions of one box were filled with zinc shavings and this was found sufficient with close attention, but as they became a little fouled with dirty solution they were taken out, washed and put back again.

For reduction of the precipitates sulphuric acid was freely used, the resulting product chlorinated and the gold precipitated with ferrous sulphate.

There is an abundance of coal in the country around the mountains, and it reaches to where it almost laps over the gold deposit on the foot of the slopes. It is evident that these mountains have been elevated by pushing through the coal formation, and as the mountain rose the coal formation has been eroded.

ELECTRIC POWER INSTALLATION AT PACHUCA, MEXICO.

An interesting electric power installation is now under construction for the Cia. Anonima de Transmision Electrica de Potencia, located in the State of Hidalgo, some 100 miles north of the City of Mexico.

The water is taken from the Arroyo de Regla, a mountain stream having a minimum supply of 1,500 cu. ft. per minute. A natural rock dam at a favorable point in the canyon, impounds the water sufficiently to admit of its being diverted by a cut through the bluff into a canal, which follows mostly the contour of the mountain, a distance of 1½ miles, a work which involved the cutting of seven tunnels, aggregating a total length of 1,200 ft. through solid rock.

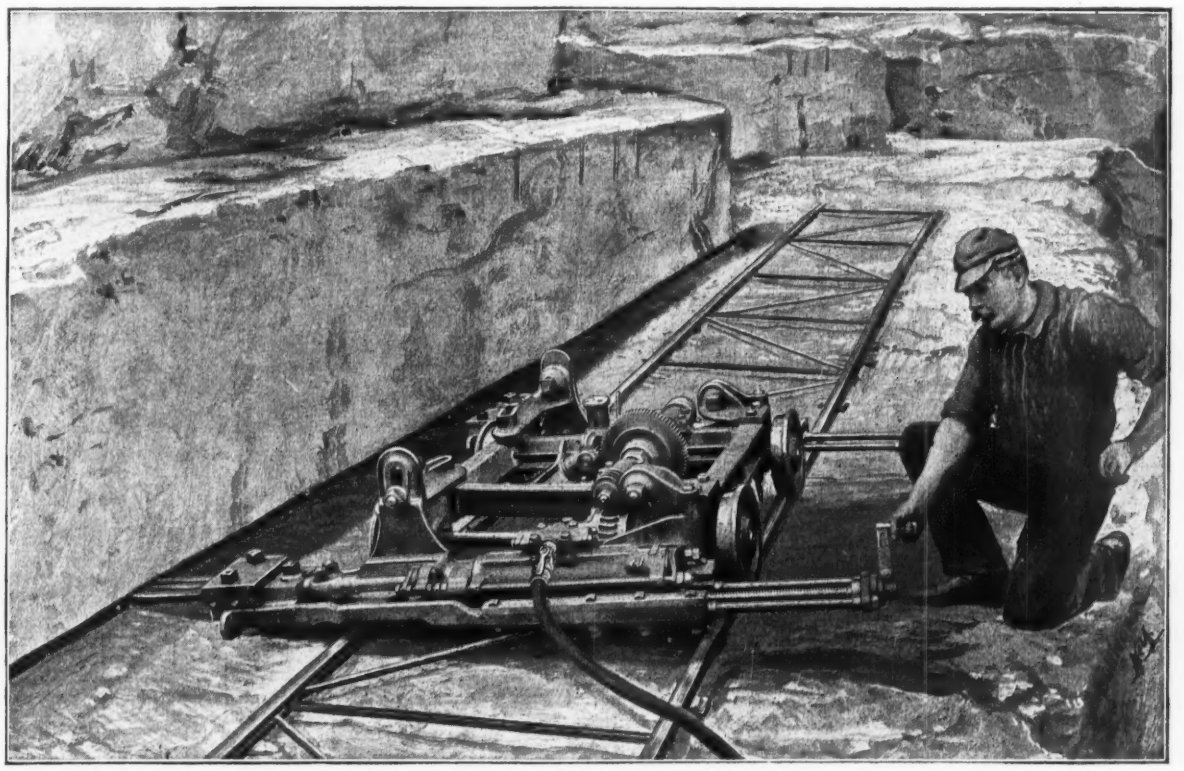
From the terminus of the canal the water is carried to the power station through 1,700 ft. of 30-in. pipe, which affords a vertical head of 800 ft., this being of varying thickness to correspond to the pressure at various points on the line, the lower portion being made of steel ¾-in. thick. The pipe line discharges into a receiver 401-in. diameter by 75 ft. long, with which the wheels are connected by lateral branches. This is made of flange steel plates ¾-in. thick, tested to 700 lbs. water pressure, and weighs upward of 50,000 lbs.

The power station consists of five Pelton wheels, 40-in. diameter, of capacity of 400 H.P. each, directly connected to the same numberof 12 pole, three-phase generators running at a speed of 600 revolutions, delivering the current at a pressure of 700 volts. Also two 24-in. Pelton wheels, speeded at 1,700 revolutions, for running the exciters. The step-up transformers are wound for a ratio of 1 to 15, making the line potential a little over 10,000 volts at the generator end. There are three transformer sub-stations in which air-blast transformers are to be used. Pelton differential governors are attached to each wheel for purpose of regulation.

This station is to supply power to the mines of the Rio del Monte Company, one of the most extensive mining organizations in the world, employing upwards of 8,000 men. The power is to be used for operating mining machinery, such as stamp mills, crushers, pumps, hoists, ventilators, etc., etc. The mines of this company are located within a radius of 20 miles, the maximum distance of power transmission being 23 miles and the mean distance about 18 miles. Various other mines in the vicinity will also be supplied with power from this station, and the City of Pachuca also furnished with light.

The Pelton Water Wheel Company, of San Francisco and New York, has the contract for the hydraulic part of the work, and the Thomson-Houston International Company the installation of the electrical machinery.

Considering the magnitude of the work, the extreme water pressure the variety and extent of machinery to be operated, as well as the difficulties attending the transportation and erection of such massive machinery in a mountainous and almost inaccessible region, this may be regarded as one of the remarkable of electric power installation.



UNDERCUTTING TRACK CHANNELER FOR HORIZONTAL CHANNELING.

RECENT DECISIONSHAFFECTING THE MINING INDUSTRY.

SUPREME COURT, TENNESSEE.

Liability for Overflowing Lands.

Where the president and general manager of a mining corporation have for some time been aware that the muddy water from the ore washers has been wrongfully permitted to flow over the lands of another, they are personally liable for the injuries arising.—Nunnelly v. Southern Iron Works, 29 S. W. Rep., 362.

SUPREME COURT, FIRST DEPARTMENT.

Evidence of Negligence.

The drawing apart of a splice in a wire rope provided by a company for hoisting, so that a workman is injured, is sufficient proof of negligence to make a prima facie case against the company where there is testimony that well-made splices do not draw apart, and that the splices in such rope were not well made.—Mason v. Tower Hill Company, 32 N. Y. S. Rep., 36.

Basic Slag for Agricultural Purposes.—At a recent meeting of the Societe Nationale d'Agriculture de France, a discussion of timely interest took place upon the manurial value of basic slag. M. Aubin, in instituting a comparison of the basic slags in use in England, Germany and France respectively, intimated that the two features of primary interest to the cultivator are the richness of the slag in phosphoric acid and the degree of its state of subdivision. M. de Monicault remarked that, in the case of the slags employed as fertilizers in England, Dr. Voelcker, who has studied the subject with great care, finds that the quantity of phosphoric acid fluctuates between 9 and 21%, and that a good sample should contain 17 or 18%; also that, as regards fineness, 70 to 90% should pass through a sieve having 10,000 meshes to the square inch. Analyses of German samples, drawn from sources which are in part relied upon to meet French requirements, indicate a richness in phosphoric acid ranging from 12·8 to 17·72%, and a fineness of subdivision of from 92·2 to 95·25. In the slags from French steel works the quantity of phosphoric acid varies between 8·57 and 17·92%, and the fineness between 70·3 and 98·35. It is particularly upon sandy and clayey soils that basic slag is advantageously employed, but practice teaches that fineness of subdivision and a high percentage of phosphoric acid should alike be demanded by cultivators in making their purchases with the view of rendering these to the fullest extent economical.

A Recent Armor Plate Test.—An experimental plate made by the Carnegie Company was attacked April 24th at the Indian Head proving ground, with very satisfactory results, a 6-inch gun being used. The plate had first been forged to the thickness of 8 in., after which it had been carbonized and then reforged until it was reduced in thickness to 6 in. The first projectile—a Wheeler-Sturling armor piercing shell—was fired with a striking velocity of 2,100 ft. per second, a velocity which was found sufficient to penetrate excellent 6-in. Harveyized plates previously tested. The result of the shot was merely to crack the plate slightly in the vicinity of the impact and loosen a bulge on the back of the plate about 20 in. in diameter. The head of the projectile was welded into the plate. The second projectile, a Carpenter armor piercing shell, was fired with the same velocity and produced practically the same effect on the plate as did the first one, except that one of the radial cracks made by the first impact was extended to the corner of the plate nearest the point of impact. The test satisfies the officers of the Ordnance Bureau that the reforged 6-in. plate is undoubtedly superior to a 6-in. plate that has not been reforged, but an exact gauge of its value cannot be determined until more extensive experiments have been made. It is the determination of the Ordnance Bureau to ascertain just how much this experimental plate will stand, and it is probable that an 8-in. projectile will be fired at it in the near future. A test of the third lot of 13-in. semi-armor piercing Sterling shells was also made. These shells are expected to penetrate a thickness of Harveyized armor equal to two-thirds of the calibre of the projectile without exploding the bursting charge. In this test a 13-in. shell fired through a 7-in. nickel steel oil tempered plate broke in two. The Bureau of Ordnance has decided, therefore, that the shells are not quite up to the required standard, and the lot will not be accepted in their present condition.

The Atomic Weight of Tellurium.—In continuation of his work on the determination of the atomic weight of tellurium, Bohuslav Brauner has recalculated the numerical data then obtained, and on reducing to a vacuum finds the number 127·71, which is higher by 0·86 than the atomic weight of iodine, 126·85, whereas from its position in the periodic system tellurium should have an atomic weight between 123 and 125. On this account he is led to the conclusion that tellurium is not a simple substance, a conclusion which is supported by the following considerations: 1. Tellurum precipitated and dried in a current of an inert gas gives nigher values for the atomic weight than when sublimed in hydrogen. 2. The properties and composition of the dibromide. 3. The varying results obtained on attempting the synthesis of the dioxide, the basic sulphate, and certain metallic tellurides. 4. The behavior of tellurous and telluric acid solutions toward hydrogen sulphide.

A large quantity of tellurium was therefore carefully purified and, after being converted into sodium sulpho-tellurate, was submitted to a process of fractional precipitation similar to that used for separating the rare earths from one another. On examining these fractions it was found that there were variations in the equivalent of the tellurium dioxide as determined by the permanganate method. This variation, however, was found to be caused by the presence of minute quantities of mercury, thallium, bismuth, copper and lead in the extreme positive fractions, and of arsenic and antimony in the negative fractions. On the other hand, the tellurium obtained by further purifying the middle fractions showed scarcely any variation in molecular weight.

In the course of experiments on telluric acid, made with the object of controlling the determination of the atomic weight of tellurium, the author has found that it is very difficult to prepare the acid in a pure state; moreover, it behaves like a mixture of two substances. He has also discovered a new modification of telluric acid, corresponding with the yellow tellurates, the existence of which was predicted by Berzelius.

The discovery of argon inclines the author to believe that it is one of a new group of elements (or a mixture of them) in the periodic system—the Argon group—coming between the last two groups; and if it be assumed that tellurium is a mixture, or alloy, or compound of the true tellurium with argon No. 4, or "triargon," it would consist of equal parts (atoms) of the two—125·4 + 130 ÷ 2 = 127·7, and have the formula $Te_2A^4_2$.

PATENTS RELATING TO MINING AND METALLURGY.

United States.

The following is a list of the patents relating to mining, metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

TUESDAY, APRIL 23D, 1895.

537,858. Converter. Harry J. Lewis, Pittsburg, Pa. Provided with an air-blast pipe having two or more separate passages, in combination with a valve adapted to control the passages, and tuyeres having adjacent to or below them two separate air-chambers whereby the blast is diverted from the uncovered to the covered portion of the tuyeres during the tilting operation.

537,872. Coke Oven. Charles H. Vannier, Chicago, Ill., assignor to the Griffin Wheel Company, same place. Oven having a dome-shaped top and flat bottom, a series of straight horizontal flues arranged beneath the bottom and communicating with a common transverse flue, a series of straight vertical flues in the rear wall, each vertical flue having direct communication with two of the horizontal flues, the inclined flues leading from the tops of the vertical flues into the oven, and one or more inclined air passages leading into each vertical flue.

537,880, 538,001. Apparatus for Manufacturing Pig Iron. Charles P. Williamson, Birmingham, Ala. The process consists in dropping the ore through a series of separate combustion chambers, the material being passed from one chamber to the next below in a form of a shower of small particles, openings distributed horizontally throughout the area of each chamber supplying suitable deoxidizing and reducing gases.

537,890. Tunneling Machine. Jonas L. Mitchel, Chicago, Ill. Combination of a tunnel-forming cutter, consisting of a tubular cutter head, a main frame having guides therein, and of a diameter adequate to enter the tunnel formed by the cutter, a carriage sliding in said guides and lying in the transverse plains of the bed, a tubular non-rotatory support around the cutter head, and connected to the carriage in lines near the walls of the tunnel.

537,931. Artificial Fuel. Jean D. Oligny, Montreal, assignor to Daniel Ormond Frye, Lachine Locks, and Louis Gibson Harris, Toronto, Canada. The fuel is composed of garbage, refuse or other material in such quantity as will completely absorb a composition of oil, chloride of calcium, caustic soda and powered soap.

537,941. Method of Roasting Ores and Recovering Vapors Therefrom. Heinrich F. D Schwahn, Kansas City, Mo. The process consists in mixing the ground ores, roasting and subliming the resultant mixture in a suitable furnace, and injecting aqueous vapors into it, and in bringing the vapors resultant from the treatment, consisting chiefly of sulphuric acid vapors, carbonic acid gas and metallic vapors, in contact with a combination of chloride of sodium, nitrate of sodium or potassium and the resultant nitric acid, hydrochloric acid and of sulphates of the alkalies.

537,945. Concentrator. William Tarrant, Petersham, New South Wales. An inverted conical table, a conical feed plate covering the table, except at the edge, and a ring of fibrous material projecting from the under surface of of the feed plate.

537,947. Ore pulverizer. Angelo Tornaghi, Sydney, New South Wales. Pulverizer of the ball type, in combination with rollers carried by arms.

537,998. Compound for and Process of Aiding Combustion of Coal, etc. George S. Spring and Herman L. Reiwitch, Chicago, Ill. Process consists in applying a compound of sodium carbonate and magnesium sulphate to the coal.

538,031. Miner's Lamp. Christopher L. Anton, Monongahela City, Pa. Combination of a lamp body, a spout extending upward therefrom and having the tongue or fastener, and a flat guard or shield fitting over the spout and having a notch to receive the tongue, whereby the guard is firmly secured in place between the flame and body of the lamp.

538,099. Amalgamator. John F. Daniels and Joseph H. Allison, Denver, Col. The combination consists of an upright shaft carrying an inverted conical sieve, a shell or case surrounding the sieve, and a defector or divider adjacent to the outlet.

538,148. Furnace Feeding for Chain Grates. William H. Berry, Hoosick Falls, N. Y. A moving grate with a hopper having an adjustable gate composed of a series of slides capable of independent adjustment vertically whereby fuel is supplied in a layer of any desired shape or thickness.

532,161. Metallic tube. William Hillman, Coventry, England. As a new article of manufacture, a helically coiled continuous flat-metal, ribbon-tube, having plain edges overlapping each other slightly more than half the width of the preceding coil, whereby two thicknesses of metal are provided throughout the completed tube, and three thicknesses at the joints.

538,202. Ore Tramway. James M. Swem, Denver, Col., assignor to the Swem Tramway Company, same place. Combination and arrangement of the movable cable, pulleys, stationary track, trolley, frame and carrying wheels.

538,210. Mining Machine. Henry B. Dierdorff, Columbus, O., assignor to Joseph A. Jeffrey, same place. A bed frame adapted to be made stationary, and lie outside of the kerf, a carriage moving forward and back on said bed frame, two oppositely reciprocating cutter carriers mounted on the front end of the carriage and adapted to be constantly pressed forward while cutting, and to be advanced into a kerf away from the bed, and cutters secured to the carriers and arranged to cut a kerf to receive both the laterally reciprocating carriers and the advancing carriage; the cutter-carriers can be carried under the coal beyond their own width and will laterally balance each other.

538,212. Process of Refining Nickel and Copper Mattes. Arthur L. Grant and Charles G. Richardson, Toronto, Canada; said Grant assignor to Charles Riordon, same place, and John Roaf Barber, Georgetown, Canada. The process consists in first converting the matte into a finely divided mixture of metallic nickel and copper and then subjecting the mixture to the action of sulphuric acid.

Great Britain.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy:

WEEK ENDING APRIL 6TH, 1895.

22,569 of 1894. B. Peitzsch, Hochst-am-Main, Germany. Making Alkaline Sulphides by heating sulphate in a closed furnace to a temperature not exceeding the melting point of the required sulphide.

2,032 of 1895. A. Francois, Seraing, Belgium. Safety Lock for Miners' Lamps, operated by pneumatic pressure.

3,090 of 1895. J. Sutherland, Brooklyn, U. S. A. Improvements in Amalgamators, consisting of two tables rotating in opposite directions round a hollow snaft with mullers between geared to the tables.

WEEK ENDING APRIL 13TH.

3,680 of 1894. J. Nicholas, Liverpool. Obtaining Gold and Silver from Ores by treating with oxalic acid and hypochlorite, and precipitating with stannous acid.

9,878 of 1894. C. J. T. Vautin, London. Reducing Metals from Alkalis and Alkaline Earths by forming an alloy of tin in an electrolytic bath with molten tin as cathode.

20,727 of 1894. A. Ellis & Sons, Wakefield. Miners' Safety Lamp with flat instead of round wick.

1,858 of 1895. J. Warwick, Newcastle-on-Tyne. Treating Lead Fumes; improvements in Patent No. 12,961 of 1886.

PERSONAL.

Messrs. Ricard & Freiwald, the well-known metal dealers of Amsterdam, Holland, announce that they have associated themselves in partnership with W. E. Earle and have opened an office in London, England.

Dr. L. Saarbach, formerly of the well-known firm of Wyatt & Saarbach, has associated himself with Dr. H. Endemann. Messrs. Endemann & Saarbach have opened laboratories at 23 William street, and will do business as analytical, technical and consulting chemists.

Mr. William Kent, of this city, sailed for Europe this week. He has lately been suffering from overwork, brought about by his labors during the past few months in connection with the preparation of his "Mechanical Engineers' Handbook," which is shortly to be issued.

Lieut. H. H. Barroll, U. S. N., who has been for some time past on duty as inspector of armor-plate at the Carbon Steel Works in Pittsburg, Pa., has been relieved and ordered to the Naval War College at Newport, R. I. Lieutenant Barroll has had extensive experience as navigator and executive officer, and has also made a special study of naval tactics and defence, which well fits him for his new duties.

OBITUARY.

Robert Klotz died at Maunch Chunk, Pa., on May 1st, aged 76 years. He was a Mexican war veteran, and for over 50 years was a prominent figure in State and national affairs. He was the first Register and Recorder of Carbon County. He was a trustee of the Lehigh University, and one of the managers of the Laflin & Rand Powder Company.

Jonathan Warner, a pioneer mine owner and iron manufacturer of the Mahoning Valley, died on April 18th, at Youngstown, O., aged 87 years. Between 1846 and 1855 he built and operated several furnaces about Youngstown and developed coal and ore properties. In 1858 he built two furnaces at Mineral Ridge, operating them for 15 years. He also opened up coal property at Brazil, Ind. He was one of the organizers of the Republic Iron Company and was prominent in the development of its well-known Marquette Range property, being president of the company up to 1875.

John Newton, the well known engineer, veteran of the late war, died in New York City, on May 1st. General Newton was born in Norfolk, Va., in 1823, and from an early age showed remarkable mathematical ability. His desire for a military life was so strong that his father secured him an appointment to West Point from which he was graduated, in 1842 second in a class of 56. His high standing in his class gave him the choice of the branch of the service he would enter, and he selected the engineers. He was assistant professor of engineering at West Point when still a Second Lieutenant, and a few years later he took an active part in the construction of various fortifications and national engineering works along the Atlantic and Gulf coasts. He was engaged in this work until 1860, excepting during 1858 when he was chief engineer of the Utah expedition. When the war broke out General Newton was chief engineer of the Department of Pennsylvania, and later he held a similar place in the Department of the Shenandoah. From August, 1861, until March, 1862, he was assistant engineer in the construction of the defences of Washington with the rank of Brigadier-General, and during the Peninsular campaign, he served with the Army of the Potomac and distinguished himself by his heroic conduct in various battles, for which he was promoted to be a Major-General of Volunteers in 1863. He commanded divisions at Chancellorsville and at Salem Heights, and, upon the death of General Reynolds, was put in command of the First Army Corps, which he led on the last two days of the battle of Gettysburg. His gallantry in the field and his able engineering work on this occasion caused him to be breveted colonel in the regular army. He served through the war with marked distinction, and in March, 1865, his gallantry was once more rewarded with the brevet of Major-General of Volunteers and of Brigadier-General and Major-General of the regular army. In January, 1866, he was mustered out of the volunteer service. In April, 1866, General Newton, as Lieutenant-Colonel of Engineers, was ordered to New York city to begin a number of improvements, the greatest of which was the removal of obstructions in the river at Hell Gate. To successfully accomplish the removal of the dangerous rocks at Hell Gate required the solution of difficult engineering problems never before grappled with, and the invention of new apparatus, notably a steam drilling machine, which has since been in general use. Those empowered to select a man for the work hit upon General Newton, and he carefully and conscientiously studied the problems, and the accuracy of his conclusions was shown in the exact correspondence of results with the object that he sought. Hallett's Reef and Flood Rock, having been scientifically mined under his direction, were destroyed by two great explosions, the first on September 24th, 1876, and the second on October 10th, 1885. General Newton's work in these matters excited the admiration of engineers all over the world and many compliments were showered on him. He was elected a member of the National Academy of Sciences, and was made an honorary member of the American Society of Civil Engineers. At the same time that he was studying the Hell Gate problem, General Newton was superintending engineer of the construction of the defences on the Long Island side of the entrance to New York harbor; of the improvements of the Hudson River, and of the fort at Sandy Hook; the improvement of the Harlem River; of the Hudson River between Troy and this city; of the channel between New Jersey and Staten Island, and of a number of harbors on Lake Champlain. On June 30th, 1879, he was promoted to be a colonel of engineers, and on March 6th, 1884, was made chief of engineers in the regular army, with the rank of brigadier general. On August 27th, 1886, he was placed on the retired list of the army at his own request. On August 28th, 1886, he was made commissioner of public works of this city. From the day of this appointment until the expiration of his term on November 24th, 1888, he conducted that great city department in a way that it had never been conducted before. Politics were absolutely eliminated from the department, all sorts of reforms were instituted, and an ironclad rule was made that there should be no removals save for good and sufficient cause. He became president of the Panama Railroad Company and held that post up to the time of his death.

SOCIETIES AND TECHNICAL SCHOOLS.

Engineers Club of Philadelphia.—A regular meeting of the club will be held May 14th. A paper on "Coffer Dams" will be read by William H. Dechant, and one on "Railway Construction in the Peruvian Andes," by James R. Maxwell.

West of Scotland Iron and Steel Institute.—At the annual meeting, held on the 19th inst., Prof. A. Humboldt Sexton, F. I. C., M. I. M. and M., was unanimously elected president for the next two years in succession to Mr. James Riley, who has held the position since the foundation of the Institute three years ago.

McGill University, Montreal.—Ten of the senior students in mining engineering, under Prof. W. A. Carlyle, have just returned from an interesting visit to the extensive copper mines at Eustis, Que., where they were engaged in underground surveys and the examination of the methods of mining and milling there in vogue. Mr. John Blue, manager, placed the mine and its appliances at the students' disposal. At present 3,000 tons per month of ore are being shipped from this ore schute, that is being worked at a depth of 2,250 ft. on a dip of 35°, and as the ore is almost pure iron pyrite, with about 4% copper and $2 in gold and silver, it is first treated to convert the sulphur (40-46%) into sulphuric acid, and then the cinders are matted, after being mixed with raw ore, to finally recover the value in copper, gold and silver. The mining is done mostly with machine drills, while a diamond drill is doing valuable work in prospecting, a large body of ore being discovered away in the hanging wall. On the surface the ore is broken up and classed as "rough," "pickings" and "fines," the latter being jigged, producing three grades. Fully 500,000 tons have been mined and 100,000 tons of ore are now in sight. At the Albert mine, one-half mile away, the men were admitted to the large concentrating works, but the mine and chemical works are closed to all visitors. Upon the hillside Captain Howard (of Gatling-gun fame) was busy turning out a batch of fulminate of mercury, with which he supplies all the cartridge factories in the United States.

INDUSTRIAL NOTES.

The Baltimore (Md.) Iron, Steel and Tin Plate Company has started up after an idleness lasting since October 6th last.

The Pittsburg Tin Plate Company, New Kensington, Pa., works its plates throughout in palm oil, and excludes all wasters.

The Monongahela Tin Plate Company, Pittsburg, is now operating six of its nine mills. The remaining three will start up shortly.

The rod mill of the New Castle Wire Nail Co., New Castle, Pa., averages from 100 to 110 tons of No. 5 rods in a 10-hour turn.

The plant of the Crescent Sheet and Tin Plate Company, Cleveland, O., is practically completed, and will start up next month.

There was recently turned out 396,100 lbs. of No. 5 rods in one turn at the rod mill of the Oliver Wire Company, on the South Side.

The Pulsometer Steam Pump Company, formerly at 120 Liberty street, has removed to more commodious quarters at 135 Greenwich street, New York.

Randolph Brandt, No. 38 Cortlandt street, has been made New York agent for the J. B. Williams & Son leather belting, and carries a full stock of their goods.

The Linden Steel Company has started up one open-hearth furnace and is now making open-hearth billets for its own use, and also for the general market.

The property of the Bertha Zinc and Mineral Company, of Pulaski, Va., has been sold and will be known hereafter as the Bertha Mineral Company of New Jersey.

Messrs. Wallace & Burton have formed a co partnership and will carry on a general brokerage business in iron and steel, with headquarters in the Carnegie Building.

The Pennsylvania Steel Company, at Steelton, Pa., has contracted to put in a Harvey furnace to Harveyize the steel castings to be made by the company for crusher jaws.

The two 12-in. mills of the rolling mill department of the Pennsylvania Bolt and Nut Works, at Lebanon, Pa., suspended operations on April 29th owing to a lack of orders.

The Vulcan Iron Company, of Tamaqua, Pa., which has been idle for many years, commenced operations on April 29th. The shops will give employment for 500 men and boys.

The new steel works of King, Gilbert & Warner in the southern part of Columbus, O., will be making steel soon after May 1st. Most of the men employed will come from Pomeroy, O.

At a conference between the 400 striking furnace men and employers at New Castle, Pa., on April 29th, the strike was virtually settled. The men agreed to return to work at the old wages.

The new Norton Tin Plate and Can Works, at Baltimore, Md., will consist of a tin plate works 275 × 60 ft., and a can factory of 200 × 60 ft. The contract for erecting the building has been awarded to J. Rodatz.

The capacity of the steel plant of the Taylor Iron and Steel Company, at High Bridge, N. J., will in a short time be doubled. Work has already been commenced on the extension. When completed the plant will give occupation to about 200 men.

R. Seeburger has bought the plant of the Kansas City Steel & Iron Company, at Argentine City, Kan., and will operate it as the Seeburger Steel Works. The plant consists of an 18-pot gas-fired crucible steel melting furnace. A train of rolls will be added.

The Citico furnace, of the Citico Furnace Company, of Chattanooga, Tenn., will shut down in a few weeks for repairs. New lining is to be put in, and it will take some time to do the work. It will be the first shut down in three years.

Riter & Conley have secured the contract to construct a dredge boat, 172 ft. long, 40 ft. beam and 5 ft. depth of hold, the hull to be built of steel, for the Mississippi Dredge Company. The firm also reports a number of orders for structural and boiler work.

A new power-house is being erected by the Pittsburg Locomotive and Car Works, of Allegheny, which will cost, when completed, about $10,000. Other extensive improvements, which will tend to materially increase the capacity, are under way and projected.

The Hocking Valley road has closed a contract with the Pullman Company for 1,000 30-ton coal cars, costing over $300,000, for delivery this summer. This is in preparation for the better business expected to result from the completion of the Ohio Coal Association.

The Jeffrey Manufacturing Company, Columbus, O., has recently issued a neat and attractive looking catalogue of its coal mining machines and mine equipments. The illustrations and descriptions of the various machines give an excellent idea of their construction and performance.

The Berlin Iron Bridge Company, of East Berlin Conn., is putting up an iron bridge at Thomaston Conn., consisting of two plate girder spans, each 60 ft. long, with a roadway 22 ft. wide, and two side walks, each 6 ft. wide. The bridge will be made entirely of iron and concrete, no woodwork being used in the construction.

The Pelton Water Wheel Company reports the following sales: 2,000 H. P. plant for electric transmission to Pachuca silver mining district, Mexico; wheels for electric light station in Quezaltenango, Guatemala; plants for coffee plantations in Tapachula, Mexico; number of plants for mines in Colorado, Montana, Idaho and Utah.

The explosion doors put on Rosena furnace at New Castle, Pa., have been tested by a slight slip that occured a short time ago. The doors were cut near the top of the down-corner and a cage built about it at that point. It is the hope that these doors will permit ready vent in case of slips, thus avoiding the blowing out of the bell.

A press dispatch from Cleveland, O., dated May 1st, says the moulders employed in eight foundries went on strike this morning for an increase in wages. The men held a mass meeting last night and decided to go out to-day if the increase was not granted. Nine foundry firms conceded the advance out of 17 where the increase was asked for.

The Link-Belt Machinery Company, Chicago, is now engaged in building 3,000 H. P. Standard water tube safety boilers for the North Chicago Street Railway Company's new power plant at Hawthorne avenue and Hobbie street. Among recent orders

received by the Link-Belt Machinery Company for the Standard boiler are Fabacher Bros.' Hotel, New Orleans, La., 150 H. P.; Martin & Van Oven, Naperville, Ill., 100 H. P., and the City of Independence, Independence, Ia., 200 H. P.

The annual meeting of the stockholders of the Joseph Dixon Crucible Company, Jersey City, N.J., was held April 15th. The following directors and officers were re-elected: Directors—E. F. C. Young, John A. Walker, Daniel T. Hoag, Richard Butler, William Murray, Alex. T. McGill, Jerome D. Gillett. Officers—E. F. C. Young, president; John A. Walker, vice president and treasurer; Geo. E. Long, secretary. The Joseph Dixon Crucible Company was established in 1827.

The annual convention of the Amalgamated Association of Iron and Steel Workers will be held in Cleveland, O., in two weeks, and it will be the most important session since 1892. The organization is stronger now than at that time, and it covers a larger territory. This year the great question, as usual, will be a revision of the wage scale so as to secure a restoration of the wages lost during the business depression. Since the summer of 1893 the wages of the iron and steel workers have been going down. The puddling rate fell from $5.50 to $4 per ton, and even that rate has been cut in many places, notably in Pittsburg. The voluntary reduction of 10% in the tonnage rates for finishers was followed last year by a further reduction of 10%, and in the Youngstown district the finishers took another cut of 15%. The only workers who escaped were the sheet nail hands. The tin plate workers compromised with a reduction of 12½ and 15%, one-half of which was demanded by the manufacturers. The demand for a wage restoration will likely cover all departments of mill work, with the possible exception of the tin plate branches.

The Dearborn Drug & Chemical Works, Chicago, has introduced a vegetable boiler compound which is said to have given excellent service. The company makes an analysis of the water used in each case, and upon this bases the mixture of its vegetable compound. Regarding the analysis of waters for boiler use it says that the necessity for knowing by analysis the matter contained in boiler feed water, is essential to its successful treatment. The waters are so various in quality that each requires separate consideration. The neutralizing agents most commonly employed have been the salts of sodium and potassium, but these have a tendency to produce galvanic action and consequent corrosion. The tendency of these sodium and potassium salts to foam is also objectionable. The most satisfactory manner of neutralizing the minerals in water is to first make a careful and thorough analysis of the water; after this is done and the exact data secured, the next calculation is to ascertain the correct neutralizing agent and the amount necessary for each mineral contained in the water. For this vegetable materials are considered preferable so far as they are effective and economical, as much on account of their harmlessness to the boilers, fittings, &c., &c., as for their ready chemical combination with the minerals of the water and their adaptability in preventing priming and foaming.

A chancery judgment was rendered in Louisville last week which is important to holders of bonds in the Big Stone Gap Improvement Company. The case was between H. C. McDowell, Jr., against Ballard Thurston, trustee. The defendant's demurrer to the petition was overruled and it was adjudged that the plaintiff is entitled to recover three certain coupons attached to each of 11 bonds in the hands of the trustee. The result of the case is of importance to the owners of bonds, though the interest of the plaintiff amounted to only some $500. The action was a friendly one and was filed on April 5th, last. It seems that an agreement was entered into on November 17th, 1891, between the holders of about 90% of the first mortgage bonds of the Big Stone Gap Improvement Company and the trustee, by which the latter was authorized to receive the bonds of the company "at their face value, interest not to be counted," in payment of 90% of the indebtedness to him of purchasers of town lots. On March 7th, 1892, the plaintiff being indebted to the trustee for the sum of about $9,000, tendered him 10% of the amount in gold and 11 of the bonds receivable under the agreement. To the bonds were attached coupons, matured and unmatured. The defendant agreed to accept the bonds at a value of $800 each if the plaintiff would forfeit the four matured coupons attached to each bond. The plaintiff agreed under protest, and it was resolved that the question be submitted to the court for adjudication. The coupons are worth $18 each, the total value of the disputed paper being $594. The indebtedness of purchasers of lots, however, to the trustee is stated to be about $200,000, about $180,000 of which is, under this agreement, payable in bonds.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" of what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind, and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying or selling goods of any kind.

GENERAL MINING NEWS.

A dispatch from Denver, Colo., says that an arrangement has been made between the Florence Oil and Refining Company and the Continental Oil Company by which the oil war of several years' standing has been brought to a close. According to the agreement, it is said, the Continental will purchase the entire product of the Florence company, in return for which Eastern oils will be kept out of the Western market, and the entire supply for Colorado, Wyoming, Montana, Utah, New Mexico, Nevada, Idaho and Arizona will come from the Florence district. The wholesale price of illuminating oil will be advanced immediately from 6 to 15c. per gal. The oil fields of the entire West will be prospected as never before. There are at present in the Florence district about 1,000 producing wells and the output amounts to about 2,000 to 2,500 barrels a day. This is not enough for the prospective demand of the entire West, and an immense development is looked forward to. The Standard is said to be back of the Continental. Prospecting in the Florence fields received a new impetus with the advance in crude oil in the East, and last week three new wells were opened, with an addition to the production of about 200 bbls.

ALASKA.

Alaska Mexican Gold Mining Company.—The clean-up for the month of March was as follows: Period since last return, 31 days; bullion shipped, $18,682; ore milled, 6,677 tons; sulphurets treated, 132 tons. Of bullion there came from sulphurets, $5,330. The working expenses for March were $14,342, leaving a surplus of $4,340 for the month.

CALIFORNIA.

Kern County.

(From Our Special Correspondent.)

Amelia.—This mine, in the Agua Caliente District, is sending about a carload of high-grade ore and concentrates to the Selby Company monthly and is working 10 tons daily in its mill, using a 6 ft. Woodbury and two 4-ft. Frue concentrators. Two shafts now down 200 and 140-ft. are connected by a 300-ft. tunnel every 50 ft. The shafts are dry, and no pump will probably be required before the 300-ft. level is reached.

Mono County.

Following are extracts from the latest weekly official letters of the superintendents of Bodie mines:

Bodie Consolidated.—The yield for the week ending April 21st was 15½ tons of ore from the different openings below the 300-ft. level. The estimated value of the ore was about $45 per ton. In the south drift from the east upraise, 42 ft. below the 300-ft. level, the ore is from 8 to 10 in. wide, and is of good grade. A stope has been started north of the winze from the south drift, 300-ft. level. The seam of ore in the face is small, but of very good grade.

Bulwer Consolidated.—During the week ending April 21st we finished cleaning up at the Bodie Tunnel mill. There was crushed on the run 353 tons of ore. Shipped to the Nevada Bank April 20th bullion valued at $6,017. Total amount of bullion received from the milling, $8,076.75. Extracted and put in the main ore chute during the week, 25 tons of ore, valued at about $15 per ton.

Mono.—The east crosscut from the south drift 400-ft. level is still in porphyry.

Nevada County.

(From Our Special Correspondent.)

Gold Ridge.—This mine, near North Bloomfield, has run a tunnel about 200 ft. to tap a gravel channel. There is a large ledge of quartz on this property and preparations are being made to erect a 40-stamp mill.

Murchie.—Two fine ledges in this mine furnish enough good ore to keep the mill running steadily. The results are satisfactory, and arrangements are being made to increase the plant.

Placer County.

(From Our Special Correspondent.)

Trueman—Ackerman.—The shaft on this mine at Bowman is down 40 ft. on a 16 in. vein. Several thousand dollars worth of rich ore has been taken out.

San Bernardino County.

(From Our Special Correspondent.)

McHaney Bros'. Claim.—This property, in the Pinon Mountain District north on Indio, prospects very well. An incline is now down 12 ft., showing a 15-ft. vein. One lot of four tons milled $900, another of seven tons almost $2,000. The vein can be traced 300 ft. on the surface.

San Diego County.

(From an Occasional Correspondent.)

The mill at Cargo Muchacho has started up on ore from the Compadre vein, which, at the present stage of development, promises well. Mr. Frank Guerra, for years the superintendent of the Cargo Muchacho, is in charge of the mine; and M. R. Ritchie and T. L. Johnson are in the mill. Some thorough prospecting and development work is being done in other mines in the vicinity.

The Gold Cross Company, at Hedges, is keeping its 40-stamp running day and night while the managers are very busy putting up 60 more with which to work the ore of that mine. The sale of five mining claims near-by to parties able to open them up speaks well for the district. The placers at Mesquit, a little west of the Gold Cross, are enticing many thither who are out of work.

At Picacho things are gradually improving. The new shaft on the Gold King is down 50 ft., all in good ore. A careful test made last week gave excellent results. On the Gold Queen, an adjoining claim, some of the finest specimens of white gold were taken out that were ever found in the camp, or in the White Gold belt.

Juan Silvas is opening the Gold Carter mine with good prospects. The vein is 10 ft. wide and rich in free gold. Wm. Swain has been prospecting the White Gold Group and found some rich rock. Only for a vexatious lawsuit a 10-stamp mill would be under process of construction in these mines.

Some fine rock was taken out of the Ponce de Leon mine last week. This mine is believed to be the one that fed the Providencia Canon with its great yield of coarse gold, as none was ever found above the Ponce de Leon vein.

The new discoveries in this immediate section make it one of the most promising on the Colorado. Most of the mines in this as well as in the White Gold Group are within one mile of the Colorado River, and none more than two miles away and all are reached by canons of easy grade leading down to the river.

In the Picacho basin, four miles west, the placer mines are turning out about $500 weekly. A few of the placer miners have gone to Mesquit. Very rich ore has lately been found in the old Colorado and South Goshen mines near the surface.

An estimate made of the amount of ore that can be quarried out of some of the old mines, without going below the bed of the arroyos that cut the veins are as follows: West Pacific, 15,000 tons of $8 ore; Control, 10,000 tons of $10 ore; Gold Zeal, 10,000 tons of $10 ore; Venus and Mars each 57,692 tons of $5 ore; San George, 184,615 tons of $5 ore, and Goshen, 110,769 tons at $8. I obtained these figures from a mining man who has just been at the mines and bases them on starting in at the bottom of the arroyos and running open cuts at a grade so as to turn the water out of the mine into the dry beds of the arroyo, and taking out all of the vein matter and working it in the mill. The value per ton above is based upon the tests which he has made, and are confirmed by others. He is also having tests made on the No Hay, Dulcenilla, Mina Rica and other mines adjoining.

The new railroad which will soon be built from a connection with the Utah Southern and the Denver & Rio Grand Railroads, at Cedar City, Utah, to Yuma, and thence to San Diego, will follow the west bank of the Virgin and Colorado rivers, and pass directly through the rich gold belts at Eldorado Canon and Picacho. By parties interested in and well posted on this new line, I learn that it is perfectly feasible, and will be built within the next three years. If so, it will open the mineral country from Cedar City to Yuma along these two rivers, among which are Yuma County's silver mines, which now, since the advance in the price of silver and lead, are again attracting the attention of mining men in the field, a large number of whom have been visiting the Picacho, Chuck-a-Walla, Lost Horse, Camp Thomas, and last but not least, the mines here at Cargo Muchacho and Gold Rock, which are also large bodies of good milling ore.

Sierra County.

(From Our Special Correspondent.)

Four Hills.—This mine, just over the county line south of Johnstown, has started up again under the management of Moody & Grant. A 10-stamp mill is on the ground. Some rich ore was taken out of this mine before it shut down. The whole vein prospects high grade ore.

Tuolumne County.

(From Our Special Correspondent.)

Black Oak.—This mine three-quarters of a mile southwest from Soulsbyville, is again in the hands of Scott Dowe & Co., the original owners. The shaft now down 500 ft. shows an 8-ft. vein of fair ore. Additional stamps are being put in.

COLORADO.

Eagle County.

At Red Cliff active work can be noticed on all sides. Mining timbers are being hauled to Gilman mines, and several properties on the edge of the town are actively working. Among these are the 89, being worked by R. M. Sherwood; Mountain Eagle, under lease by Charles Malin; the Ovee, by Bowland & Harman; the Hewett, by Latern & Gay, who are taking out some fine silver ore from a body 2½ ft. wide, struck at 80 ft.; the Little May, by C. W. Linsley; the First National, by Olmstead & Robinson; the Wyoming, by McMillan & Johnson, who are taking out good ore, a recent shipment of which netted them $2,300.

Ground Hog.—These properties are actively working. The Nottingham lease has just shipped two cars of high-grade ore; Anderson & Lease are taking out ore preparatory to shipping soon; Wood, Phillipps & Co. are drying 25 tons of the famous rich gold carrying talc of this district and Farnum & Co. are drying some before shipping it to the smelters. Adjoining these properties the Pine Mar-

tin is being worked by Gillett & Henry, who have two cars of ore on the drying platform. This is also a gold property and the ore runs about 3 to 4 oz. on an average. Gilmer, Jenks & Co. have leased the Matchless, near the Ground Hog, and the Courtney, Iron Will, Summit and Astor in the same locality, are all working.

Holy Cross Mining and Milling Company.—This company is in shape to keep a regular force at work from now on. New machinery has recently been placed at the concentrator, which now has a capacity of 80 tons of ore a day. Manager G. L. Havens, who has recently returned from a trip to the company's offices at Portland, Me., reports that the company will put on many more men and concentrates be shipped regularly from now on. The concentrates that are being shipped at present range from $130 to $150 per ton in gold, and this average will probably be raised when the work is fully under way.

Turkey Creek.—John J. Hill has laid out a site for a water supply two miles up Turkey Creek, above town. A dam 16 ft. in height is planned to form a reservoir of 30 ft. wide and 8 ft. deep. This water will be piped to the city limits where 5,000 miners' inches will run dynamos for the operation of the machinery at the Hill tunnel mouth on East Battle Mountain. Fifteen of the claims to be developed by the tunnel will be patented and active work will soon begin.

El Paso County—Cripple Creek.

(From Our Special Correspondent.)

Anaconda. — This company on Gold Hill employs 28 men. The raise in the lower tunnel is up over 200 ft., and the expense and delay caused by hauling timbers such a height has retarded somewhat the progress of the raise. A distance of less than 60 ft. is all that now prevents communication with an upper tunnel. This will be completed early in May. This raise has exposed a large section of valuable stoping ground.

The Chicago and Cripple Creek Tunnel Company.—This company, after penetrating Globe Hill for 982 ft., has suspended operations in the tunnel for a short time and is prospecting at surface with good results. If the tunnel was driven 150 ft. further it would be under the place from which mineral is being found at surface.

C. O. D.—This property, situated in Poverty Gulch, is steadily improving. The south drift in the lowest or 250 ft. level has been advanced in the ore shoot 46 ft. A sample taken across the vein for 4 ft. wide assayed $169 per ton.

Elkton.—Shipments from this property are increasing. The second grade or the dump ore is being treated at the local mills with satisfactory results. Sixty-eight men are employed on the property.

Gold Hill.—The north side of Gold Hill presents a very animated appearance, as fully a dozen shaft houses can be seen from the town of Cripple Creek, all being worked on lease. They are all or nearly all regular shippers.

Gold King.—This property on Gold Hill has every appearance of being a good shipper, as a 12 ft. vein was recently encountered which assays from $10 to $60 per ton. The property is worked under lease and bond by Messrs. Redd & Huntley, who are now sinking a surface shaft with all speed.

Independence.—This mine, on Battle Mountain, and owned by W. S. Stratton, continues to increase its output from month to month. In my report of the property published in the "Engineering and Mining Journal," of April 6th, the profits for January were stated at $129,000, February $105,000, and March $130,000. The information was furnished on March 31st, before the March returns were complete, and not a few of the local mining men thought the figures were exaggerated. The returns of March are now complete, and the net smelter returns showed that the owner received $165,000 for that month from that one mine, and less than 30 men employed.

Victor.—This property, on Bull Hill, is making preparations to sink the vertical shaft below the present bottom, 80 ft. from shaft. This shaft was sunk about two and a half years ago. A new 60 H. P. steam hoist is now on the ground and it is expected to be at work within two weeks. The shaft will intersect the vein at or about the fifth level, 250 ft., and it is still the intention to sink vertically and crosscut to the vein or veins. Five drifts are being prosecuted day and night. Over 100 men are employed.

Hinsdale County.

Golden Fleece.—The output of the Golden Fleece last month amounted to over $39,000, says the Lake City "Phonograph." The company is working a force of about 75 men, but only 25 men are employed in taking out ore for shipment, the rest being engaged in development work. The regular 2% dividend was paid by the company on April 22, amounting to $12,000.

Lake County—Leadville.

(From Our Special Correspondent.)

Big Six Combination.—In the Nettie Morgan shaft development work is resulting favorably. The main ore body opened up by No. 2 drift is dipping and is being followed. The breast at present shows 10 ft. of pay ore and shipments are regular.

Bohn Shaft.—Some extensive development work has been done in the new Bohn shaft. In the drift run out from the 475-ft. level, where a streak of ore was followed for a month, some important results have been noted. From the upraises made in this drift other drifts have been started, and this has demonstrated that there is an ore body of great size and richness. Up to date the width of the ore chute is disclosed to the extent of 50 ft. The value of the breast of this body is very high. The average low-grade stuff assays 50 oz. silver, while the higher grade runs several hundred ounces, and from that as high as 700 oz. to the ton. It is believed that the Bohn has caught the great Penrose ore chute on the southern trend. The work of the past month in the down-town silver properties is certainly very encouraging.

Capital.—The talk in mining circles to-day is chiefly about the finding of chlorides in the Capital shaft and the development of a silver body in the Bohn shaft. The Capital shaft was for many years worked by the Carleton Brothers, but this spring the Northern Mining Company, with R. B. Estey at its head, was formed to work it more extensively. In their Capital shaft a drift was started at the 500-ft. level, and on April 20th broke into a magnificent lot of chlorides running on an average of 800 oz. of silver to the ton. At the present writing it is impossible to say how much of this chloride there is or what it will lead to, but the management believe that they have the continuation of the great chrysolite ore body.

First National.—The lessees on this property, which joins the Doris, have already met with encouraging results. The new shaft is down 120 ft., and a 7-in. streak of mineral was encountered which assays 7 oz. gold and 54 oz. silver. The shaft is to be sunk deeper before drifting will be commenced.

Hulda Mining Company.—The mineral is growing richer as work is doing on the Garbutt shaft. The vein is 10 ft. wide and part of this is pay ore. Shipments are in the neighborhood of 250 tons a month.

Morning and Evening Star.—There is but little new work being done on either the Morning or Evening Star properties. However, there are quite a number of lessees at work, and shipments average from 50 to 60 tons a day of iron ore.

Pennsylvania.—Mr. S. M. Carleton one of the interested parties in the Northern Mining Company, has secured a lease on the Pennsylvania, and is negotiating with Eastern capitalists with a view of developing this ground. The property lies on Breece Hill, between the Ibex and Bix Six Consolidation.

William Wallace.—Lessees are to start up this property, which is located on Carbonate Hill. There are known ore bodies in the different levels, and some important work may be looked for.

Wolftone.—The ore body encountered recently is opening out nicely and shipments of sulphides are increasing. The other shafts of the Moffat combination are also shipping regularly.

Pitkin County.

(From Our Special Correspondent.)

Alta Argent.—The main siding from the Cowenhoven Tunnel has been completed, and the work of cutting out the stations for the main incline and the main raise is well advanced. This property continues to ship regularly.

Aspen.—While no new strikes of importance have been made lately, still there is a general improvement in the camp.

Della S.—The main ore chutes in this property show no falling off in size or grade as they are developed at increasing depths.

Difficult Creek.—It is expected that in a few weeks now it may be possible once more to resume operations in the Difficult Creek gold district.

The improving condition of the camp is evidenced by the posting of a notice by the mine managers stating that on and after the first day of May next the wages of miners and trammers will be increased from $2.25 to $2.50 for a shift of 8 hours.

Free Silver.—The shaft is now down nearly 750 ft. They are sinking through porphyry, which necessitates the use of closer and stouter timbering.

Martha Washington.—The new drift from the shaft is in considerably over 100 ft., but the ore has not yet been cut by it.

Mineral Farm Consolidated Mining Company.—The properties worked under this head are looking better than ever. Some very fine bodies of ore are being opened up. All the workings are being resurveyed, and the maps which had dropped behind are being brought up to date.

Regent.—The shipments from this mine continue regularly, and the mine itself holds out promise of being better than it has been for some time.

San Miguel County.

Canton.—After getting within 50 ft. of the vein, the force of men engaged driving a crosscut on the Canton were obliged to cease work temporarily on account of surface water. They are in over 500 ft. and will finish the work as soon as possible.

Cimarron.—At the Cimarron mill water power has been substituted for steam for the summer, and it is running full capacity, turning out the usual quantity of gold concentrates per day. About 100 men are employed on the mine and mill.

Columbia and Winona Mining Company.—O. J. Davis, superintendent of this company, is expected in Telluride shortly, when the 20-stamp mill will be started for a season's run. Quite a number of men are now and have been all winter employed on the mine developing and taking out ore. This group of mines lies on the same vein as the Cimarron, and the character of the ore is very similar, running from 1 oz. to 2 oz. in gold per ton.

Tom Boy Mining Company.—This company has started operations. The clean-up last week, according to the Telluride papers, was the largest ever made, being 800 oz. of gold bullion. The ore carries on an average 1½ oz. per ton. The vein is from 6 to 12 ft. wide and filled with yellow quartz from wall to wall. The ore is easily mined and requires but little sorting. The company owns 3,000 ft., two claims, Tom Boy and Belmont, on this lead, and has a lease and bond on an adjoining claim. The company's property is already extensively developed. The mill contains six Huntingtons, having a capacity of 120 tons a day, and a Waters aerial tramway connects it with the mine. Manager A. H. Lloyd is making arrangements for the accomodation of more miners, and when completed the force will be largely increased.

FLORIDA.

Owing to the depression in the market for phosphate rock all the companies in the Associated Phosphate Mines of Florida have temporarily suspended mining, and will remain shut down until there is some improvement. These are the hard rock mines in the territory extending from a point just below High Springs down to Pemberton. With the exception of the mines in the High Springs district, all of which are in operation, and three other mines which are neither in this district nor in the association, practically all the mines have ceased working. This, however, does not include the pebble rock mines, which have never entered into any association.

IDAHO.

Owyhee County.

De Lamar Mining Company.—The statement for the quarter ending March 31st shows a total of 11,387 tons ore worked. The gross product was $240,020, an average of $21.08 per ton; the expenses were $117,165, and the net earnings $122,855. The directors have declared a dividend of 1s. per share and a bonus of 6d. per share, making the total distribution for the year ending March 31st amount to 4s. 6d. per share, or 22·5% on the par value of the stock.

KENTUCKY.

Laurel County.

Laurel Coal Association.—A despatch from London says that 600 coal miners employed by the companies composing the Laurel Coal Association went out on a strike on May 1st, and will probably remain out all summer. They strike for the pay of last year, 70c. per ton. The operators offer only 55c.

MICHIGAN.

Copper.

Tamarack, Jr., Mining Company.—Work at the No. 2 shaft is going on as rapidly as possible, says the "Red Jacket News." The timbermen and engineers are now working 8-hour shifts. The water in the shaft is down to the drift, but the length of time to complete the work will depend on the amount of water in the drift. A record of 108 buckets in 8 hours has been made since hoisting commenced.

Iron—Menominee Range.

A press dispatch from Iron Mountain says that the Hamilton and Ludington mines will resume operations, as will several smaller mines in the vicinity. The mines have contracted for the placing of their output at an advance over last year's prices. The idle men are all being put to work at better wages than paid last season.

MINNESOTA.

Duluth & Iron Range Railroad.—The comparative statements of results for two years shows the following:

	1893.	1894.
Gross earnings	$1,202,865	$1,516,837
Operating expenses	590,959	717,248
Net earnings	$611,906	$799,589
Interest earned	24,208	4,567
Total	$636,114	$804,156
Interest on bonds	$255,564	$274,500
Rentals	1,890	1,890
Interest on income certificates	210,000	210,000
Miscellaneous	.....	4,129
Total	$467,454	$490,519
Surplus	$168,660	$313,637

(From Our Special Correspondent.)

The Consolidated Iron Mines have built and will operate a laboratory at Duluth and will do the determinations for the Consolidated mines—the Mountain Iron, Rathbun, Adams, Lake Superior, as well as the Oliver and Lone Jack, and probably one or two more.

It is stated that the Consolidated and the Minnesota Iron Company will combine in charging independent mines that are stock piled 10c. a ton for loading ore into cars. There is at present only one stock-pile mine not directly owned by the two companies, the Franklin, which is controlled by Franklin Rockefeller, James Corrigan and others.

The Duluth & Iron Range road has completed its track into the new town of Evelyth, where are located the Fayal and Adams and St. Clair mines

and is running regular trains there. The mines at this place will be shipping ore in about three weeks. The Duluth, Missabe & Northern is already at the place.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Winston Brothers have resumed their stripping contract on the Auburn and have 100 men at work. They will move a very large amount of earth during the summer.

At the docks of the Duluth, Missabe & Northern road there were at the first of this week ores from nearly all the mines of the range that will ship over the road during the summer to any large extent. The dock is full, and the first cargoes will be out this week.

Over 350 men are at work at the Oliver and Lone Jack, some for the mining company and some for the stripping contractors.

There are 100,000 tons of ore at the docks of the Duluth & Iron Range, the Tower mines, the Canton, Norman, Auburn and Chandler contributing. The first boats will be at the dock by May 1st.

Fayal.—This mine has been systematically developed since its control passed into the Minnesota Iron Company, and it is said that more than double the quantity of ore is now in sight that was measured when the mine was bought.

Sauntry.—This property, in 5, 58-17, has been further developed by the steam drill, and a large additional body of ore discovered. It lies north of the village of Virginia, and is the property of one of the members of the Musser-Sauntry Lumber Company.

St. Louis County.

(From Our Special Correspondent.)

Rainy Lake District.—The finds at Lake Manitou are still exciting interest. The latest report is from an island in Big Manitou Lake, where an explorer named Sanderson has uncovered, it is said, a ledge of rock that is very rich. These finds are as yet unconfirmed, however, and are probably very much exaggerated.

Iron—Vermilion Range.

Minnesota Iron Company.—This company on April 30th announced a 10% increase in wages.

MISSOURI.

Jasper County.

(From our Special Correspondent.)

JOPLIN, April 29.

There was considerable activity last week in this zinc and lead district. The mines are all working on full time and new development work is being done in almost every direction. The developments on the West Joplin Lead and Zinc Company's land, the John H. Taylor land, the Chas. Glover land and the John Jackson estate, all on the west side of Joplin, are very encouraging. The demand for zinc ore is fully up to the production, but prices remain unsettled. The past week zinc ore sold at $17 to $18.50 per ton. One choice lot of clean high-grade ore brought $19.50. Lead ore remains at $16 per thousand.

Following are the sales of ore from the different camps for the past week:

Joplin, 1,594,230 lbs. of zinc ore and 268,040 lead, value $19,501; Webb City, 430,740 lbs. of zinc ore and 53,840 lead, value $4,732; Carterville, 1,135,790 lbs. of zinc ore and 159,840 lead, value $12,364; Oronogo, 20,000 lbs. of zinc ore and 65,..10 lead, value $1,205; Carthage Pleasant Valley Mines, 60,000 lbs. of zinc ore, value $570; Zincite, 24,950 lbs. of zinc ore and 4,420 lead, value $292; Galena, Kan., 1,660,..000 lbs. of zinc ore and 430,000 lead, value $19,330; districts, total value, $57,994; Wentworth, 42,..950 lbs. zinc ore, value $390; Alba, 84,000 lbs. of zinc ore, value $775; Newton County, 293,310 lbs. of zinc ore and 133,150 lead, value, $4,780; Aurora, 882,000 lbs. of zinc ore, and 80,000 lead, value $6,929; Springfield, 44,000 lbs. of zinc ore, value $396; zinc and lead belts, total value for the week, $71,264. Zinc and lead belts, total production for the week ending April 20, ..5,773,950 lbs. of zinc ore and 1,153,900 lead, value, $71,897; total for the two weeks, $143,161.

The Lead and Zinc Association, which was organized over two years ago, has kept persistently at work, and from present appearances will have secured by June 1st on the mines and mining lands in this district to commence the carrying out of its part of the contract. This means the erection of smelters of sufficient capacity to handle not less than 60% of the entire production of zinc ore. This ore will be purchased from the producers on its assay value, and the price of the ore determined by the price of spelter in St. Louis. It has taken a long time to perfect these plans and bring the producers up to full understanding of the metal value contained in the zinc ore of this district.

Lawrence County.

(From Our Special Correspondent.)

Spring Valley Mining Company.—This company has completed the system of water works from Spring River, a distance of 2½ miles, so that they will have an abundant supply of water for operating the new mill, which will be started at once. This is one of the best and most complete concentrating mills that has been erected in the entire district.

MONTANA.

Deer Lodge County.

Montana Mining Company, Limited.—The tota results reported for three months ending March 31st were: Ore treated, 14,510 tons; gold produced, 6,650 oz.; silver, 95,060 oz. The gross returns for the quarter were $187,600, and the expenses $141,600, leaving the net returns $46,000 for the quarter.

NEVADA.

Esmeralda County.

Silver Star District.—The Hawthorne "Bulletin," speaking of this district, says:

Direct.—Douglass & McQuillan, on the Direct, are taking out considerable $20 ore, and will soon make the third shipment from this mine. Work is progressing on the Orphan Boy, Duke and Excitement claims and the usual amount of ore taken out.

Hardscrabble.—In the Hardscrabble mine they have started stopes at the 65-ft. level on the lower incline, the vein at that point being 12 ft. wide. The road is finished to the mill and the crushing of Hardscrabble ore will begin in a few days. About 300 tons will be put through.

Mary.—The tunnel on the Mary mine is being pushed ahead, showing a nice vein. The last ore milled over $23.

New Party.—This property shows a good body of ore at both points where the work is going on. The last milling averaged $40 per ton.

Snowball.—Work is being pushed on this mine at two points, the vein widening as they sink In the bottom it is 4 ft. between walls of $20 ore. The Fortuna, on the same vein, is also showing a nice body of ore, which will go over $30. Work is progressing in this mine as usual. On the Hardluck work is being prosecuted in three places all showing ore. Berger and Cutts have a foot of $50 ore.

Lincoln County.

De Lamar Mining Company.—According to the DeLamar "Lode," the mill last week operated under minor difficulties, caused principally by the light lining of the furnace. This has been repaired with brick that will withstand great wear, and the mill is now working up to its capacity, handling 45 tons of ore each day. The timber work is about completed on the west side, where another chlorination tank will be put in. The foundation just completed on the east side is for a 125-H. P. Corliss engine. The next addition will be a 100-H. P. engine for the electrical generator and for the power for the hoists in the mines and also to run the air compressor. There are now two hoists for the mines in transit. All work and developments are progressing satisfactorily, and about the only detail of annoyance is the scarcity of water. A pipe line is contemplated that will supply 100 gals. per minute. We understand it has been determined that it is absolutely necessary for the company to look to Meadow Wash for its water supply.

Storey County—Comstock Lode.

Occidental Mining Company.—The case of the State of Nevada v. Occidental Mining Company went on trial at the District Court, Virginia City, April 24th. The suit, or virtually two suits, were disposed of, one in favor of the defendant and one in favor of the plaintiff. The suit for the recovery of taxes levied against the defendant in Storey County in 1894 was decided in favor of the plaintiff to the amount sued for, $1,390. This verdict was rendered in accordance with instructions from Judge Mack, after a consultation of attorneys. In a similar case pending between the same parties, for taxes levied against the defendant in 1893, a judgment was rendered in favor of defendant as on the merits, without costs. This case was submitted on the pleadings.

Following are extracts from the latest weekly official letters of the mine superintendents:

Belcher.—On the 300-ft. level the joint Belcher and Segregated Belcher south drift is in 166 ft. from the Belcher shaft. The face shows porphyry. We hoisted during the week 45 tons of ore, the average mine car sample of which is $16.29 per ton, and also shipped to the Brunswick mill for reduction 301 tons and 230 lbs. of ore.

Crown Point.—During the week ending April 23d a connection was made between the south drift from the raise on the 700-ft. level and the fourth floor north drift. Work was resumed in the raise from the east crosscut from the north lateral drift on the 700-ft level. The top is in porphyry, clay and seams of quartz. During the week we extracted and shipped to the Mexican mill 670 tons of ore. The average battery sample assay for the week was $10.48 per ton, of which $9.35 was gold.

Segregated Belcher.—During the week we hoisted 12 tons of ore, the average top-car sample of which was $34.46 per ton.

NEW MEXICO.

Grant County.

Mogollon District.—The Confidence mill at Graham is running steadily doing excellent work. The Colonial or Maud S. will soon have its vanner plant in operation. The grading is completed and all supplies are at hand, ore included, says the Silver City "Sentinel." The Deep Down is milling some good ore of its own and also sinking a shaft, expecting to strike higher grade base ore similar to that developed on the Maud S.

Pacific.—Owing to a scarcity of water the Pacific mill has been compelled to cut down its running time and consequently reduce its force at the mines.

Scotch Lass.—This mine at Central is now being operated by H. J. Hutchinson. He struck a rich pocket of gold last week, the extent and value of which is not yet known. Other men are working on the mine under lease.

Tall Pine.—This mine, at Pinos Altos, owned by Alvah Mason, Walter C. Hadley and A. S. Campbell, is producing some good ore. They made a recent shipment which ran 1¼ oz. in gold, 40 oz. in silver and a good per cent. in copper.

NORTH CAROLINA.

Stanly County.

(From Our Special Correspondent.)

Crawford Gold Mine.—The large nugget reported from this mine as weighing 7 lbs. (See "Engineering and Mining Journal," April 13th), has been sent to New York, and its weight, according to the United States Assay Office, was 101·58 oz., a little better than 8 lbs. The work progresses. The nugget is now in possession of the owner, Mr. Geo. Crawford, 33 Wall street, N. Y.

Parker Gold Mine.—This property is resuming operations. Capt. Henry A. Judd, the manager, has just returned from London, where he has succeeded in raising capital for the purpose of sinking a shaft for the development of their quartz veins 250 ft. They are erecting a 60-H. P. hoisting engine with boilers and necessary pumps. This development will be watched with much interest by mining men, as it is the first deep sinking attempted on this class of quartz veins in this State. Some of the veins on the surface have produced ore yielding $100 per ton, and some good sized nuggets. The mine is located at New London on the Yadkin Railroad.

OHIO.

The Ohio Association Auxiliary to the United Mine Workers of America met at Columbus, O., on May 1st, with President Ratchford in the chair. The convention is called "to deal with the price question." According to former agreements Ohio miners worked 9c. below the Pittsburg district. The important question now is, Shall this differential of 9c. continue? The call as read shows further that the men who stopped work on May 1st in Ohio did so by recommendation of their organization officials until a scale is arranged.

The Massillon delegates, after the convention took a recess, held a meeting to consider the matter of deciding to ask for a scale of 70 for Ohio, 75 to be the Pittsburg rate, and Ohio operators to hold back 10c. to go to the support of the striking miners at Pittsburg who are being pressed to work below the scale of 1895. This plan is opposed by all Ohio operators and many miners, on account of its being dangerously near, if not a full-fledged, conspiracy.

Hocking Valley Region.—A dispatch from Nelsonville says that the coal miners throughout the Hocking Valley are all out, having left their work until the scale is settled. It is believed the suspension will not continue more than a week.

Belmont County.

Coal miners in the Bellaire district demand 60c. a ton. They will not return to work for less, and the mines are closed. Seven thousand miners have struck.

OREGON.

Baker County.

North Pole.—These mines have been sold at sheriff's sale, Alexander Baring, one of the principal stockholders, becoming the purchaser for a consideration of $55,000. Resumption of operations on this property is expected shortly.

Phœnix.—The expected sale of this mine in the Robinson district has been consummated. The purchasers are Messrs. Charles W. Jackson, of New York City, and C. H. Jackson and Alliene Case, of Boise, Idaho. The consideration is said to be $40,000

Virtue.—Considerable activity has been manifested in mining circles at Baker City during the past few days. In the Virtue, at a depth of 460 ft., a vein of free milling ore 2½ ft. wide was struck lately, and Superintendent John McNally shipped to the Boise assay office last week a gold retort weighing 1,400 oz., and worth $25,888. It was the result of a 23 days' run with 20 stamps.

Jackson County.

Gold Hill Channel Mining Company.—These mines are almost wholly owned by Seattle capital, among the owners being Byron Phelps, J. M. Sparkman, S. McLean, Frank Rivers, Charles Twombly, Will H. Parry, Mrs. Mary J. Ross, John H. Sexton and Mr. Morton. Mr. McLean is manager of the company and J. H. Shortwell superintendent. The property is a placer claim, and the company holds about 1,000 acres along the bed of an ancient river channel, the sediment being in depth from 40 to 90 ft. The company's headquarters are at Gold Hill, about 15 miles from Jacksonville. The claims are located on Foote creek, 10 miles from Gold Hill and 2½ miles from the Rogue river, says the Seattle "Post-Intelligencer." The company has in the old channel a tunnel about 1,500 ft. in length, and the deposit from the surface to the bottom is said be rich in free gold. The company is employing 12 men steadily. The hills about the old channel are full of quartz and many prospectors are on the ground.

PENNSYLVANIA.

Anthracite Coal.

A press dispatch from Scranton says that a number of the collieries of the Delaware, Lackawanna & Western Railroad Company, which have been working less than three-quarter time, were put on full time on April 29th, and over 1,000 empty cars that have been lying idle in the yard at Taylor were put into service again.

A despatch from Scranton reports the finding of a rich vein of coal in the No. 5 mountains east of "No. 5 Meadows." The land is owned by William Connell, one of the largest individual anthracite operators in the State. For years the presence of coal in that region has been a matter of conjecture. Fine black dirt, resembling an outeropping, was found several days ago, which led to the organization of a prospecting party of engineers. They found positive evidence of the presence of coal. A bore hole will be sunk very soon. Additional importance is attached to the find from the fact that the coal bed adjacent to and northwest of the No. 5 region is rapidly being worked out.

Red Ash.—Six driver boys at the Red Ash Colliery struck work because they had to do the work of spraggers and wanted spragger's pay for it, $1.65 a day. As a result of the strike 400 men are out of work. Morgan B. Williams, vice-president of the company, says that the employees' demands will not be allowed.

Union Coal Company.—This company has resumed operations at its Hickory Swamp Colliery, giving employment to 400 men and boys.

Bituminous Coal.

A press dispatch from Pittsburg says that striking miners on the Wheeling division of the Baltimore & Ohio had a back seat on May 1st when all but nine of the 400 men at the Snowden and Gastonvill mines signed an iron-clad agreement to work for eight month at 55 c. a ton. The agreement that has been in force in these mines expired on the first and the strikers had hoped to bring all these men out. This was the day set apart by the operators for a general start of the mines of the division with a view to breaking the strike. The start was made, but it was not up to the expectations of the operators, for very few men are at work. At the Jumbo and Midway mines of F. L. Robbins about 18 men are at work, which is a small proportion of the capacity. The Henry Floersheim, German and Nottingoam mines are also in operation with a few diggers at work. A number of operators made no attempt to start, but expect to have plenty of men in a few days. The river mines are now running at the 69c. rate and it is thought that as soon as they close down the miners who will be thrown out of employment will be glad to get work at 69c. per ton.

An estimate of the activity among the railroad mines in the Pittsburg district shows that 20% of the normal output of coal is being mined in spite of the strike. Henry Floersheim and other operators promise to make an attempt to resume with new miners. Trouble with the strikers is feared.

New York & Cleveland Gas Coal Company.—An attempt made this week to get together the miners of this company for the purpose of their joining the miners' strike was a failure. The miners' officials went to Turtle Creek, but failed to find assembled the miners employed by the company.

Berks Country.

The Rittenhouse Gap ore mines will resume operations next week after having been idle for more than a year.

Oil.

A sensational oil strike is reported in Butler County. The well started off at the rate of 50 bbls. an hour, and has been keeping it up. It is the first strike of consequence since the excitement resulting from the jump in prices began. The new well is the property of the Eastern Oil Company and M. Finegan. It is located on the Dorsey farm, in the Brownsdale third sand pool. This is the company's second venture on the Dorsey farm. The location of the well is important, showing that the rich streak of third sand in Butler County extends to the south instead of the southwest, as was originally supposed. The Forest Oil Company is building a rig on the Barclay farm within 300 ft. of the Dorsey gusher, and has another well drilling on the same farm.

UTAH.

Juab County.

Bullion-Beck & Champion Mining Company.—The new mill will be started next week. In regard to the reported ore strike in the Caroline, the Tintic "Miner" says that a considerable body of lead ore carrying both silver and gold has been uncovered on the 800-ft. level, but that no prospecting on the ore body has yet been done and the drift is being run straight ahead. But little ore is being hoisted, as the ore bins for the mill are full and there will be but little room for more until the mill begins running. Fifteen men are now at work on the Caroline, and the force will be increased as soon as the mill demands the ore.

Summit County.

Anchor Mining Company.—The dugway leading to the Anchor concentrator was shoveled out last week and hauling ore to the mill has begun. The mill was started up last week with one shift, and the force in the mine was increased at the same time. Nothing definite is known concerning the proposed removal of the concentrator from its present site to a point near the mouth of the tunnel.

VIRGINIA.

Pocahontas Coal Region.—A press dispatch from Pocahontas, dated May 1st, says: "No new developments in the field to-day. Everything is quiet, with the probability that nothing of interest will take place before Sunday. The Southwest Company and the Browning mines, at this place, are the only ones in operation in the field. A committee of strikers will make an appeal to the miners here, asking them to stand by the strikers by stopping work and thus prevent the reduction of 20% posted by the operators. The Southwest competing collieries raise wages to the same basis. The Trobey Valley operators propose to raise the wages of their employees to the 40-c. rate on June 1st, providing the other companies continue to pay it.

WEST VIRGINIA.

Late advices from Bluefield state that the strike is on in the West Virginia coal fields along the Norfolk & Western Railroad. Not a mine is in operation; 15,000 miners met at Keystone on May 1st to organize and perfect measures to induce or force the Pocahontas, Va., men to join the strike. No dissatisfaction exists among these Virginia miners as they have not been cut. In the event of a refusal to join the strike force doubtless will be attempted, and both sides are determined. The citizens of Pocahontas will aid the home miners, and they have ample arms and ammunition. West Virginia miners are swarming into Virginia on every train, and the situation is reported as alarming. No shipments of coal are being made at Bluefield. The cut of 20% in wages was never contemplated by the Virginia companies, and there are only a few union men among their employees. In the event of trouble at Pocahontas, the Virginia miners only number 900 against 10,000 in West Virginia, and resistance could not long last. The miners understand they have the support of the operators in all peaceful ways to adjust their troubles.

The railroad at important points is being guarded. Business is partially paralyzed and many miners are leaving for their homes. An outbreak may occur at any time. The strike is understood to be practically to adjust railroad rates on shipments.

A dispatch from Elkhorn says that the strikers are getting beyond the control of representatives of the United Mine Workers. Guards are at the tipples and shaft mouths, railway trestles and bridges. The miners at the Houston works resumed work on May 1st, but there are still 1,000 out. There are prospects of a general resumption this week.

Flat Top Coal Region.—A press dispatch from Bluefield says that the strike in the coalfield is on and 15,000 men, employed in 35 mines in the Flat Top field, went out on April 30th. The men are determined to resist the employment of non-union miners. Only 5 mines in the field will be worked, out of 39. Coal traffic is practically at an end. The present movement is said to be backed by the operators to compel the Norfolk & Western Railroad to come to terms. Many miners, the majority being negroes, are leaving the region.

WYOMING.

Albany County.

(From Our Special Correspondent.)

Cooper Creek District.—Mr. Charles Richmond, an Englishman, has been investigating the new gold camp and has expressed himself as much pleased with it. He has returned to London, where he will complete his tests, and if they are as favorable as anticipated, he will furnish means to develop some of the most promising prospects.

Carbon County.

Consolidated Copper and Silver Mining and Milling Company.—This company will commence work on its property near Rawlins very shortly. Men will be put to work in the tunnel, which has been driven 185 ft., and it is expected that regular shipments of silver and copper ore will be maintained.

Fremont County.

(From Our Special Correspondent.)

Horse Creek.—A rich placer find is reported from Horse Creek. This stream is a tributary to the Big Wind River, and is about 100 miles northwest of Lander. This is a new country, with but few settlers, and has never been prospected thoroughly.

Lewiston Gold Camp.—James Anderson struck a rich quartz vein some 8 ft. wide last week. The The shaft is now down 30 ft.

Laramie County.

(From Our Special Correspondent.)

Hartville Iron Mines.—A large shipment of iron ore has been made to Pueblo, to be smelted by the Colorado Fuel and Iron Company for a test run. A Chicago syndicate owns between 100 and 200 valuable iron claims of 20 acres each in this camp. The ore is a red hematite, and according to many tests runs from 62 to 64% metallic iron.

Natrona County.

The recent rise in the price of oil is turning attention toward the oil resources of Central Wyoming, says the Cheyenne "Tribune." At present the only active operator in the field is the Pennsylvania Oil Company. Its productive wells are 5 in number, with No. 3 nearly completed. The refinery at Casper is working day and night, and is being put in shape to produce high grade illuminating oil, the present output being lubricating.

(From Our Special Correspondent.)

Wyoming Lubricating Oil Company.—This company, which is composed of Colorado men, recently shipped in two car-loads of machinery, which has been freighted from Casper to its property on Salt Creek. The company controls 1,280 acres of this basin, and has contracted for a 1,500-ft. well.

LATE NEWS.

(SPECIAL TELEGRAM TO THE "ENGINEERING AND MINING JOURNAL.")

Leadville, Colo., May 2d.—The Modoc Mining Company, on Breece Hill, encountered a good body of gold ore to-day. The company's shaft is located on the Deer claim and the ore body is disclosed in one of the drifts run out from the 380 ft. level. The foot-wall of the vein is quartzite. The body already opened is 3½ ft. wide and assays from 1 to 10 oz. in gold per ton and 10% to 38% lead. How large the ore body is cannot now be determined, but the find is of much importance as it indicates that the contact plane east of the Little Johnny is mineralized. This is the first discovery of mineral of any importance east of the Little Johnny, and it opens up an ore chute in what might practically be called virgin ground.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, May 3.

Statement of shipments of anthracite coal (approximated) for week ending April 20th, 1895, compared with the corresponding period last year:

Regions:	Apr. 20, 1895. Tons.	Apr. 21, 1894. Tons.	Difference.
Wyoming	383,968	391,062	Dec. 7,094
Lehigh	101,854	117 615	Dec. 15,761
Schuylkill	212,203	195,956	Inc. 16,247
Totals	698,025	704,633	Dec. 6,608
Total for year to date	11,939,052	9,472,110	Inc 2,466,942

PRODUCTION OF BITUMINOUS COAL, in tons of 2,240 lbs., for week ending April 27th and year from January 1st:

Shipped East and North:	1895. Week.	1895. Year.	1894. Year.
Phila. & Erie R.	1,575	29.881	22,807
Cumberland, Md.	62,490	895,502	1,081,168
Broad Top, Pa.	10,275	160,197	122,593
Clearfield, Pa.	90,625	2,235,285	1,111,471
Allegheny, Pa.	34,550	545,281	469,862
Beech Creek, Pa.	67,725	1,039,525	778.214
Pocahontas Flat Top	†	†	791,951
Kanawha, W. Va.	†	†	793,833
Totals	267,240	4,926,571	5,204,899

† Returns not received.

Shipped West:	1895. Week.	1895. Year	1894 Year.
Pittsburg, Pa	37.150	648,704	448,508
Westmoreland, Pa.	39.400	707,105	485,854
Monongahela, Pa.	13,700	245,596	162,229
Totals	90,250	1,601,405	1,096,591
Grand totals.	357,490	6,023,162	6,279,699

Production of coke on line of Pennsylvania Railroad for the week ending April 27th, 1895, and year from January 1st, in tons of 2,000 lbs.: Week, 91,399 tons; year, 1,872,538; to corresponding date in 1894, 1,069,137 tons.

Anthracite.

The month does not open auspiciously for the anthracite coal market. Trade conditions are far from good, and the continued disagreements among the companies lead to the belief that 1895 will be noted as a profitless year. So far the trade has drifted along aimlessly. The production, to be sure, shows a great increase over the corresponding period of 1894, but at the values which have prevailed and considering the depreciation of the properties by the amount of coal removed, the balance sheets of the majority of producers do not make cheerful reading to them.

The demand for coal continues light. New orders are few and small. In view of the fact that, without exception, sellers admit that the present movement of coal consists of deliveries on old business, there is but little reason to doubt that our statement of last week anent the companies' willingness to 'extend deliveries" and "swell orders" booked before the comic-operatic advance, is true. We are in a position to state that within the past few days outside parties have offered to sell companies' coal considerably below the "circular." Stove and nut of good grade was offered by an agent of one of the largest companies at $3, f. o. b. Another lot of stove from a company which has professed to be very virtuous in the matter of upholding prices, could have been had for $3.05 on board. One or two middlemen and individual operators are openly willing to accept $3, and companies which will not sell as low as that in this market will sell coal in Boston for $3.50 alongside, naming a 50c. barge rate. It is doubtless true that certain sellers who have a fair amount of unfilled orders on hand are not selling coal here at any such figures, but their "new" business would not keep them busy for more than a few days. A month ago the sales agents declared that no new business would be accepted save at full circular rates, and also that all previous orders must be delivered by May 10th. The result has been that to-day what are by sellers themselves called "fair" f. o. b. prices are $3.10@$3.20 for stove and $3@$3.10 for broken, egg and

chestnut, instead of $3.35@$3.20 respectively as named in the circular. Also, the knowledge that the orders booked during April at the "official" prices would not keep the collieries busy one week. We have not the actual figures at hand, but we may say without hesitation that the amount of coal which has not been sold at the "circular" is simply enormous.

We have repeatedly pointed out to producers that the plan of holding monthly meetings of sales agents when the companies will not or cannot follow the "recommendations" made at those meetings is more than foolish. We believe it to be downright demoralizing, for nothing so inspires skepticism as an unfulfilled threat. The present condition of the trade, so far as concerns the demand for coal, is to a great extent due to the fact that dealers have ceased to take seriously the decisions of the monthly meetings. Time was when the arbitrary advances of the agents stimulated buying, and the time may be again. But buyers are skeptical of its proximity. Of late months the sales agents have met, put up prices and agreed to a restriction, and prices have not been maintained and the restriction has not been carried out. In short, it is a case of crying wolf. Dealers are no longer frightened. Instead, they go to the offices and fearlessly place orders at below the circular. They realize that a wolf may be born any day in the shape of an entente cordiale among the companies, but until that birth is duly announced on unimpeachable authority they will hear all outcries with undisturbed equanimity, and buy as they need supplies.

The meeting for May has been remarkable for the number of sittings. In the matter of volume of talk and adjournments it has broken all previous records. The first act of the play (which some people unkindly call a farce) was duly reported in our last issue. The agents met on April 25th. They could not agree on the output for May and adjourned until Tuesday, April 30th. At the second meeting the proposition to accept 70% of last June's tonnage was again discussed. Some one discovered that the Pennsylvania Railroad was not represented, and as this company, following its time-honored rule, was operating without restriction or agreement of any kind, it was suggested that it would be well to consult with that interest. The meeting then adjourned until Thursday. The Pennsylvania Railroad Company, as a company, declined to do anything in the matter, but shippers along its line agreed to restrict. On Thursday at 11 a. m. the sales agents met for the third time. The 70% proposition met with opposition and had to be abandoned. As we pointed out in our last week's review of the trade such a proposition was absurd in view of the unsettled allotment question. The sales agents adjourned for luncheon and resumed the discussion at 3 p. m. Some excitement had in the meantime been created by the publication in a Wall street paper of an interview with Mr. Richards, of the Philadelphia & Reading, in which he was made to say that his company was willing to accept any reasonable offer of a percentage of allotment. An officer of the Reading, however, assures us that the company will not recede from its demand of 21%. After more discussion a really sensible proposition was submitted by the representative of the individual operators. It was that the various producers should mine at full capacity for three days each week. This would certainly give a sufficiently great output for May and at the same time it would temporarily dispose of the allotment question. Some of the companies which did not wish the 70% plan agreed to the motion provided it was made unanimous. The greatest objection was made, we understand, by the Delaware & Hudson, which is placed in an exceptional position by its graviry road. It agreed, however, to restrict to 70% of its capacity. One or two others also wished to "confer with the presidents." Incidentally, these "presidential conferences" have been quite a feature of the May meeting. The discussion continued unabated for hours. At 5:10 p. m. the agents came out. They announced that after mature deliberation they had decided to adjourn until the next morning at eleven. The fact that they had deliberated so long, however, they regarded as a hopeful sign.

On Friday moring the agents met again and formally ratified the agreement practically reached on Thursday. During the current month the companies will close down three consecutive days each week. The question of prices was then taken up, and after some discussion it was resolved to maintain last month's "official" prices, namely, $3.35 for stove, and $3.20 for broken, egg and chestnut, net on board. The agents declare that these prices will now be maintained. Western prices were fixed as follows: Chicago, net on cars, $4.60 for broken, and $4.75 stove, egg and chestnut; Buffalo, on cars, gross, $3.75 for broken and $3.90 for the other sizes.

NOTES OF THE WEEK.

The report of the Philadelphia & Reading Coal and Iron Company for March and the four months of the fiscal year from December 1st to March 30th, gives the earnings as follows:

	March.	Four mos.
Gross earnings	$1,648,790	$7,105,230
Expenses	1,525,080	7,319,496
Net or deficit	N. $123,710	D. $214,266
Fixed charges	106,000	424,000
Surplus or deficit	S. $17,710	D. $638,266

Expenses include colliery improvements, which amounted to $42,244 for March and $173,904 for the four months. For March the gross earnings show an increase of $401,281 and the expenses an increase of $204,500, as compared with last year.

Bituminous.

A new element of uncertainity has been added to the soft coal trade by the labor troubles among the miners of various regions, full reports of which will be found in our mining news columns. So far as the Atlantic market is concerned the greatest importance attaches to the report that the miners of the Pocahontas region, with the exception of five or six mines, are out on strike. Should there be a general strike in this region the results will be far reaching and of much importance to those regions which escape the trouble. That a full strike in that section would spread to neighboring ones is altogether likely, and should be considered in any estimate of the immediate future of the trade. The reduction of freight rates, which were recently advanced by the Norfolk & Western, might solve the difficulty.

The demand hereabouts and in the East continues as last reported. The local trade remaining good. Considerable delay, however, has occurred in the movement of coal to tidewater and vessels have been scarce. They are now appearing in greater numbers and with the advancing season lower freight rates will doubtless prevail. Rates are already weakening and offers of 70c. from Philadelphia to Sound ports have been made. Nominally they are as follows from Philadelphia and Baltimore: To Boston, Salem and Portland, 80@85c.; Providence, New Bedford, New Haven, Bridgeport and other Sound ports, 75c.; Wareham, 90c; Lynn, 90c.@$1; Newburyport, 95c.; Portsmouth and Bath, 85@90c.; Dover, $1.25; Saco, $1; Gardiner, 90c., and Bangor, 90@95c.

Quotations for coal are still, nominally, on a level with the recent low prices, but it is to be doubted whether any large contracts for delivery within the present month or the next would be accepted at these figures. We quote $1.75@2.10 at Philadelphia and Baltimore, according to grade.

Buffalo, N. Y. May 2.

(From Our Special Correspondent.)

There are no new features in the anthracite coal trade; prices unchanged; demand very light; dealers unsettled awaiting future developments of the producers' fight.

Lake freighting of coal very light. The fueling question is the factor. Owners of line boats controlling the soft coal docks will not give loads of anthracite coal to vessel owners who do not purchase their fuel from them. The vessel men adhere firmly to the arrangement made last winter by the Lake Carriers' Association, whereby all fuel coal was to be shipped by one firm at a low contract price, and not at the high charge made by the line boat owners. Thus an almost deadlock prevails. A well-known vessel owner "favors most emphatically the expulsion from the Lake Carriers' Association of the first member who violates the agreement not to buy fuel from the Buffalo hard coal agents, and this sentiment is growing more pronounced and bitter the longer the deadlock continues."

The bituminous coal trade continues very quiet, manufacturers buying only for immediate requirement at low prices, as dealers fear demurrage charges and do not let a customer slip their office without effecting a sale. Stocks of all kinds ample.

The Reading receivers have asked for bids for constructing 1,000 coal cars; the Hocking Valley have ordered 1,000 also.

The Buffalo propeller lines have commenced business, boats leaving for the west daily.

There is no ice in sight off Buffalo Harbor; it has gone down Niagara river or been driven up the lake.

From the opening of navigation to April 27th, inclusive, only 18,750 tons of anthracite coal have been shipped by lake, viz: 9,700 tons to Chicago, 4,200 tons to Milwaukee, 2,450 tons to Toledo, 1,800 tons to Superior, and 600 tons to Gladstone. The freights were 40c. and 30c. to Chicago, 30c. to Milwaukee, 15c. to Duluth, 20c. to Detroit, and 25c. to Toledo, Superior and Gladstone.

The waters of the lakes and channels are very low this spring. The Welland canal is suffering from the same cause. Many vessels have had to lighten their cargoes.

The first vessel leaving Duluth this season was the steamer Eber Ward on April 27th, bound for Buffalo. The port of Fort William was expected to be opened by May 1st.

Proposals have been asked for supplying all light ships and stations with anthracite and bituminous coal and wood in the Ninth District for the year ending July 1st, 1896.

Chicago. May 1.

(From Our Special Correspondent.)

A fair amount of business has been done in the anthracite coal market of Chicago during the past week. The aggregate tonnage of the week has been slightly larger than the preceding one, and prospects are fairly good that the next weeks' sales will be even better. The combined sales for the month of April are said to have been ahead of April of last year by a fair percentage. The stock of hard coal on the docks, rails, etc., in the city is quite large, but it is not increasing as much as the conditions would have it of a few weeks ago.

In bituminous coal the tonnage placed during the week had been good, from the fact that numerous manufacturing enterprises are finding a better business, and a good many that have been practically closed are again in the field. The advance in coal-carrying rates has probably affected buying also, as the higher rates go into effect among the railroads May 1st. It is not expected, however, that the coal roads will hold up very long, as competition is unusually intense among those roads centering in the Illinois and Indiana fields. West Virginia and Kentucky continue to send a fair amount of a better grade of bituminous coal to Chicago, and these coals appear to have a steady demand. Prices on both anthracite and bituminous coals are unsteady as yet with nothing in sight to indicate that a change for the better will take place.

There is a considerable speculation as to the outcome of the present disagreement among the soft coal miners in Illinois, Iowa, Indiana and Ohio. A good many here think a strike inevitable. In Illinois there is not much discontent among the miners, but if a general strike is ordered they will go out.

Pittsburg. May 2.

(From Our Special Correspondent.)

Coal.—There has been no coal shipment by the Ohio River for some time on account of low water; coal is still being brought from the pools to the lower landings to be ready for the first rise. The contest between the railroad operators and miners is still on; reports from the various points are very conflicting and very wide apart.

The meeting of the New York and Cleveland Gas and Coal Company miners, at the Jefferson school house was a failure; not more than 25 men were there and nearly all left before the arrival of President John A. Cairns, National vice-President Cameron Miller, and Organizer Owen Cron. A representative of the company was on hand but went away when it became apparent that the meeting would be a failure.

The working miners deny the right of the miner's officials to call any meeting at the Plum mines and that they will only recognize a call for a meeting issued by the Pit Committee of this mine. Resolved further, "That we are working under a contract with the New York and Cleveland Gas Coal Company, and that we propose to carry it out to the letter. Signed, William Herman, Martin Smith, John Cattal, Pitts Committee."

Connellsville Coke.—Trade is considerably mixed at this time: the air is full of rumors that coke is being sold below published rates. Some say that coke can be purchased at $1.20; we know nothing as to the truth of the statement. The Carnegie Company as usual is well fixed; it has about $50,000 worth of coke piled up at their various plants, purchased at low prices. Furnacemen have been cutting off their orders very largely, but the opinion now prevails that they have cut down as low as it is advisible, as it appears that bottom has been touched. The opinion now is that the worst is over and a turn for the better will follow. The week's report shows that 520 ovens were blown out, and production fell off 6,013 tons. The summary of the region for the week shows 3,767 ovens in blast, 4,067 idle. The product for the week, estimated upon the ovens drawn, amounted to 125,566 tons, as against 120,120 the week previous. Shipments to Pittsburg, 2,266 cars; to points east, 1,081 cars; to points west of Pittsburg, 2,906 cars; total, 6,253 cars.

We have just learned from what we consider good authority that furnace coke has been sold at $1.15@$1.20 per ton.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, May 3, 1895.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending May 4, 1894. F'ces.	Tons.	May 3, 1895. F'ces.	Tons.	From Jan., '94. Tons.	From Jan., '95 Tons.
Anthracite.	31	17,987	34	20,097	281,119	371,771
Coke...	92	107,561	119	132,360	1,660,536	2,459,861
Charcoal...	19	4,010	18	3,859	71,228	76,710
Totals....	144	129,558	171	156,316	2,015,883	2,908,338

The improvement in the iron and steel trade continues. From every iron center the same report comes—increased sales firm prices and a tendency to advance. In Pittsburg, our correspondent states, the business for April was about 12% in excess of that during April, 1894. An unusual demand is noted also for building material. Philadelphia reports a greater volume of business than the brokers will admit, and also an upward tendency in prices, though no material advance has taken place in sales made thus far. Consumers are convinced that there will not be any decline in prices, and in consequence are laying in supplies for the spring months, and some of them for the summer season. Wages are being advanced to old rates wherever practicable, and manufacturing is steadily gaining in volume.

The report that Connellsville coke has been sold from $1.15 to $1.20 is from an apparently reliable authority, and may be the precursor of the much talked of consolidation of coke interests in the Connellsville district. If this should come about, it is expected that coke will sell for $1.50.

There is, however, a dark cloud over the iron trade, which may develop into a thunderstorm. The reports of advancing prices and restoration of the old wage scale has caused discontent among laborers, who have not yet received any advance; and, as a consequence, strikes, which may be accompanied by violence, are in progress and under advisement. Labor forgets that while current prices may be advancing, nearly every concern has orders at old rates and can participate in the advance only to a small degree at present.

Therefore the time for advances in wages is not at hand. The strike at Pocahontas will, it is feared, spread throughout lower West Virginia, Kentucky, Tennessee and Alabama. If it does it will paralyze industry there. Of course, miners are under a contract to carry out certain obligations, but as they are wholly irresponsible there is no possible way of keeping them up to their agreement. At Pittsburg a strike is in progress at some furnaces and also between the amalgamated associations and some mills using non-union employees. The outcome of these strikes cannot be predicted, while it is altogether likely that, as usually happens, the companies will finally succeed in conducting their works in accordance with their own views, still the trouble may extend over a long period and possibly be the cause of sympathetic strikes which will greatly endanger our prosperity.

Pig Iron.—Business shows a decided improvement. The volume of sales and size of orders is increasing, and prices hold firm. Quotations remain as follows: Northern brands, No. 1 X, $12@$12.50; No. 2X, $11@$12 gray forge, $10@$11; Southern irons, No. 1 foundry, $11.50@$11.75; No. 2 foundry, $10.75@$11; No. 1 soft, $10.75@$11; No. 2 soft, $10.50@$10.75

Spiegeleisen and Ferromanganese.—There has been no material movement in these products. Quotations are: $18@$18.50 for 20% domestic spiegeleisen at furnace, and $19.50@$20.50 for foreign, and $47@$48 for 80% ferromanganese at tidewater.

Billets and Rods.—There is little change from last week. The market is practically at a standstill and few sales have been recorded. Quotations at tidewater are as follows: Billets, $17.25@$17.75, and domestic wire rods, $23.50@$24.

Rails and Rail Fastenings.—Since the railroads have shown a tendency to purchase, there has been a better feeling in the rail market. The Pennsylvania has placed an order for 20,000 tons, and other roads are expected to soon fall into line. Rail quotations remain: Standard rails at tidewater, $22.75. In rail fastenings prices remain: Fish and angle plates, 1@1·05c. at mill; spikes, 1·30@1·35c.; bolts and square nuts, 1·80@1·95c.; hexagonal nuts, 1·95@2·05c. delivered.

Structural Iron and Steel.—A number of contracts for structural material have been placed, and there has been considerable activity in the market. Prices are firm. Quotations are: Angles, 1·20@1·35c.; beams up to 15 in., 1·30@1·50c.; channels, 1·40@1·50c. on dock; tees, 1·45@1·60c. on dock.

Old Material.—There has been little business noted in this line. Nominal quotations remain. Old steel rails, $9.50@$10; old iron tees, $10@$11 per ton; New York railroad scrap, $11.50@$12 per ton, delivered at mill, and yard scrap at $10; wrought turnings, delivered at mill, $8@$8.50; No. 1 wrought scrap at $9.50@$10.50 from yard, and machinery cast scrap $9@$10; old wrought tubes and pipe, $6.50@$7; old car wheel, $9.50@$10.50, New York; cast borings, $6@$6.50, delivered at mill.

Merchant Steel.—But little business is noted Quotations are: Tool steel, 5·65@6·25c.; tire steel, 1·30@1·35c.; toe calk, 1·60@1·70c.; Bessemer machinery, 1·25@1·40c.; open-hearth machinery, 1·85@2c.; open-hearth carriage spring, 1·70@1·90c. crucible spring, 3·40@3·65c.; axles, scrap, 1·30@1·50c.; steel, 1·25@1·55c.; bars, common, 1·15@1·30c.; refined, 1·15@1·90c.; steel hoops, 1·45@1·60c. delivered; hooks and pins, 1·40@1·50c.; plates, flange, 1·50@1·65c.; firebox, 2@2·25c.; marine, 2·45@2·70c.; sheared, 1·80c.; shell, 1·40@1·50c.; tank, 1·20@1·40c.; universal mill, 1·25@1·40c. delivered.

Buffalo. May 2.

(Special Report of Rogers, Brown & Co.)

The most marked feature of the week since our last report was written is a further advance of 25c. per ton on Southern iron. This puts prices from that section a trifle higher than Northern brands are asking, and has checked its sale in this market. The volume of business in pig iron continues good, and the whole tone of this trade shows a decided improvement over that of two months ago. Charcoal irons are in better demand, but this brand has participated less than any other in the general betterment.

Our quotations given below are on the cash basis f. o. b. cars Buffalo: No. 1 foundry strong coke iron, Lake Superior ore, $11.25; No. 2 foundry strong coke iron, Lake Superior ore, $10.75; Ohio strong softener, No. 1, $11.35; Ohio strong softener, No. 2, $10.85; Jackson County silvery, No. 1, $15.50; Lake Superior charcoal, $13.75; Southern soft, No. 1, $11.50; Southern soft, No. 2, $11.25; Hanging Rock charcoal, $18.50.

Chicago. May 1.

(From our Special Correspondent.)

The iron market for Chicago has not improved with the week, and in fact the situation is not so propitious as the preceeding week. There is a noticeable decrease in the buying of pig iron, and in structural material, billets and rails but little has been done. Prices on the whole are fairly steady, particularly those of both Northern and Southern pig irons.

Pig Iron.—The market for pig iron has receded a little during the week, the sales having been lower than last in the aggregate of fully 10%. The feature of the week is the good buying of Southern iron, that material having had more call than for any week in a very long time. In Northern iron the sales ran from car load up to 1,000 ton lots, and the Southern showed one sale as high as 1,200 tons. Prices remain firm, the Northern furnaces continuing to ask from 25@50c. advance and the Southern 25c.

Prices are per gross ton f. o. b. Chicago: Lake Superior charcoal, $13@$13.50; Lake Superior coke No. 1, $10.50@$10.75; No. 2, $10.25@$10.50; No. 3, $9.75@$10; Local Scotch No. 1, $10.75; No. 2, $10.25; Jackson County silveries, $14.50@$15; Southern coke, foundry, No. 1, $11@$11.25; No. 2, $10@$10.50; No. 3, $9.75@$10; Southern coke, soft, No. 1, $10.25@$10.50; No. 2, $10@$10.25; Southern car-wheel iron, $17.50@$18; Southern silveries No. 1, $11.25@$11.75; No. 2, $11.25; Tennessee charcoal No. 1, $13@$13.50; Bessemer, $11@$11.25; Ohio strong softeners, $13.

Structural Material.—There is not much business in structural material outside of a small demand for building shapes. There is a contract or two in sight for fair amounts, but they are not likely to be closed very soon. Quotations are f. o. b. Chicago, mill lots: Angles, 1·30@1·35c.; tees, 1·50@1·60c.; universal plates, 1·35c.; beams and channels, 1·40c.

Plates.—There is some improvement in plates, orders having been booked with the week for a larger aggregate than last. Prices are: Flange steel, 1·60@1·75c.; fire-box steel, 1·95@4·50c.; tank steel, 1·35@1·40c.; boiler tubes, 70 to 75% discount.

Merchant Steel.—Inquiries are coming in quite fast, but the amount of business moving is not in keeping with them. Still a fair week's trade has been done, and prospects are very good. Prices are no firmer, but some say they will be before another month rolls by. Prices are: Carload lots, machinery, 1·60@1·70c.; tire steel, 1·50@1·60c.; Bessemer bars, 1·25@1·35c.; toe calks, 2·00@2·10c.; crucible spring, 3·40@3·65c.; tool steel, 5½@6½c.; specials, 10·50@11·50c.

Galvanized and Black Sheets.—Business has not been very good during the week, though more could have been booked had dealers wanted it at prevailing prices. Most all are holding out for higher prices on orders running far ahead, and will handle nothing but present business at present prices. No. 27 common is selling at 2·25@2·30c., and galvanized sheets are quoted 70, 10 and 10% discount.

Steel Rails.—The rail outlook is much better; the past week orders were booked for 10,000 tons. Inquiries are numerous, and it really begins to look as though some of the large buyers would soon be in the market. Prices are still $23@$25.

Billets.—The Illinois Steel Company is practically out of the market, so far as the sale of billets are concerned. In the past few weeks the company booked enough orders to admit of their mills running until July 1st. It looks very much as though those who require billets hereafter will have to pay a higher price or go without. Present quotations are $16.50@$17.

Old Rails and Wheels.—There has been no demand for either old rails or wheels in this market during the past week. Old wheels are scarce. Old iron rails are selling at $10.75, and old wheels at $8.75.

Scrap.—The scrap market shows much improvement, and old material is actively sought for. In certain lines of scrap dealers cannot fill the demand. Quotations are: Railroad forge, $8.50@$9; dealer's forge, $8.25@$8.50; No. 1 mill, $6.50; heavy cast, $7.25; axles, $13@$13.25; cast borings, $3.75; wrought turnings, $5.25; axle turnings, $6.25; mixed steel, $6.25.

Philadelphia. May 3.

(From Our Special Correspondent.)

Pig Iron.—During the past week there have been more and larger transactions in pig iron than brokers or furnace agents will admit. For some reason, good or otherwise, considerable business that has been done is kept under cover. In two or three known instances it is because the iron was taken under long standing options, at less than current rates. The tendency is upward in prices, but prices have not advanced. All concerned anticipate some interesting developments soon. Southern agents are trying to make big summer delivery. Sales: No. 1 foundry is $12@$12.50; No. 2, $11@$11.50; forge, $10@$10.50. Demand promises to improve for forge. Bessemer is dull at $12.75 asked.

Steel Billets.—In the absence of business it is to be said that big transactions are shaping up, but buyers stick to $17 as their price, at which agents of makers smile.

Merchant Iron.—Mill men feel that what they lose now they will make up a little later date on. Prices are 1c. to 1·30.

Nails.—Distribution for the past six days has been fair, at usual prices.

Skelp.—Demand for skelp is better, and agents say their reports from mills show that good sized orders are being received direct. Office business here is also improving. Grooved, 1·20.

Sheets.—The week's business in sheet mills has been good, and for small lots from store a slight advance is being paid.

Merchant Steel.—Carriage and wagon stock is moving.

Pipes and Tubes.—This week's statements are much like previous weeks.

Plates.—Orders for 1,600 tons can be traced. The eastern plate mills have picked up considerable new business, most of it for near delivery. Summer work is promising. Tank steel and heavy plates are 1·25.

Structural Material.—The plate orders have been larger than usual this week, but the mill men think the demand for shapes will be quite large this month. Several operations are in sight for which steel will soon be wanted. Angles, 1·25; beams, 1·30.

Steel Rails.—The only demand spoken of is for girders, and prices are said to be regular.

Old Rails.—More offerings than can be sold. Asking price delivered, $12.

Scrap.—Choice railroad is to be had at $12. Old axles $16, and heavy steel scrap at $11. The dealers have not been selling or buying much for quite a time.

Pittsburg. May 2.

(From Our Special Correspondent.)

Iron and Steel.—Business during the week has made gradual but steady improvement. Speculation has been less active in some departments as a natural sequence of the big business and substantial advances in prices previously noted.

Industrial recovery is attested by the concession of higher wages in many manufacturing establishments, and by strikes in others, which indicate the belief among operators that the condition of trade justifies an attempt to secure better returns for their labor. The westbound tonnage of railroads is very large, but farm work and decreased grain and cotton reserves at interior points, and the resumption of lake navigation, tend to lessen the rail shipments to the seaboard. Measured by bank clearings, the volume of business is about 12 per cent. larger for the month than it was in April last year. The advance previously noted in Southern iron has been maintained, and the general position in values is slowly but steadily gaining strenth.

While there has been a fair business in both crude and finished products, transactions, as a rule, have reflected the near requirements of consumers who hesitate to place large orders until better satisfied that the stiffening of values is to be permanent.

Pittsburg furnaces are running to their full capacity; many of them have orders sufficient booked to keep them employed for some time.

Finished material continues in good demand and will continue for some time; the large number of big buildings under contract beats all records, there was never anything like it. The new buildings are generally fifteen stories and steel ribbed, similar to the Carnegie building; the amount of steel required for their building is simply immense and will give the steel mills employment for a long time to come. Work on the new Park building, corner of Fifth Avenue and Smithfield street, will begin June 1 and be finished March 31, 1896.

The strike which has been on at the Andrews Bros., Younstown, for some time has been settled and the mills have resumed.

COKE SMELTED LAKE AND NATIVE ORE.

Tons.		Cash.
3,000	Bessemer, May and June	$10.75
2,000	Bessemer, May and June	10.70
2,000	Bessemer, June, July	10.80
2,000	Bessemer, May and June	10.75
2,000	Bessemer, at Valley Furnace	10.10
1,500	Bessemer, May and June	10.75
1,500	Bessemer, May	10.70
1,500	Bessemer, May and June	10.75
1,000	Bessemer, June, July	11.00
1,000	Gray Forge, May and June	9.35
1,000	Bessemer, Valley Furnace	10.15
1,000	Bessemer, May and June	10.75
1,000	Bessemer, May	10.75
500	Mill Iron	9.40
500	No. 2 Foundry	10.15
500	Mill Iron	9 50
300	Gray Forge	9.50
300	Bessemer, Valley Furnace	10.25
100	No. 1 Foundry	11.00
100	No. 2 Foundry	10.25
100	No. 3 Foundry	10.00
100	No. 2 Silvery	12.00

BLOOMS, BILLETS AND SLABS.

2,500	Billets, May and June, at mill	$15.75
1,000	Billets, May and June at mill	15.75
1,000	Billets, May, June, July, at mill	15.80
750	Billets, May and June, at mill	15.80
500	Billets, May and June, at mill	15.75
500	Billets, May and June, at mill	15.85
500	Billets, May and June, at mill	15.65

CHARCOAL.

500	Cold Blast $22.50
200	Cold Blast 22.50
200	Cold Blast 22.50
100	Cold Blast, Extra 28.00
100	No. 2 Foundry 15 50
100	No. 2 Foundry 15.50

SKELP IRON.

600	Wide gr'v'd $1.20 4 m.
500	Nar'w gr'v'd 1.20 4 m.
500	Sheared 1.35 4 m.

SKELP STEEL.

800	Wide gr'vd $1.10 4 m.
600	Nar w gr'vd 1.10 4 m.
500	Sheared 1.25 4 m.

SHEET BARS.

800	Sheet bars at mill $20 50
300	" " " " 21.00

BLOOMS, BILLETS, AND BAR ENDS.

1,200	Bloom and billet ends $11.00

MUCK BAR.

500	Neutral, deliv'ed, $18.40
200	Neutral 18.00

FERRO-MANGANESE.

75	80% delivered $47.00

STEEL WIRE RODS.

1,000	5-gauge, at mill $21.25

OLD RAILS.

500	Steel rails long lengths $11.25
500	Steel rails short lengths 10.50
500	Iron rails 12.75

SCRAP MATERIAL.

350	Pipe iron, net $8.25
300	No. 1 sheared R.R. scrap, net 10.25
150	Heavy steel scrap, gross 10.25
100	Beam ends, gross 10.50
100	Coil sprigs, gross 10.25
100	Cast borings, gross 6.25

Cartagena, Spain. April 17.

(Special report of Barrington & Holt.)

We have to report but few shipments of iron ores; six cargoes is the total for the past four weeks, and two of these were high-grade manganiferous ores.

There are a few inquiries for both classes of ore, but prices are cut so low as to make business hardly possible. For the three months ending March 31st, the total shipments of iron ores were 38,725 metric tons; in addition, 214 tons of ocher were shipped.

We quote as follows, all prices being f. o. b. Portman or Cartagena: Ordinary 50% Portman ore, 5s. 2d.@5s 4d.; special low phosphorus, 5s. 3d.@5s. 6d.; extra quality low phosphorous, 6s.; specular iron ore, 60% iron, 8s. 8d. per ton. For manganiferous ores we quote as below: No. 1, 20% iron and 20% manganese, 12s.; No. 1 B., 25% iron and 17% manganese, 9s. 3d.; No. 2, 30% iron and 15% manganese, 9s.; No. 3, 35% iron and 13% manganese, 8s. 6d. Manganese ore, 35 to 40%, is quoted at 10d. per unit. Iron pyrites, 40% iron and 45% sulphur, 10s. 6d. per ton. Best quality of ocher, 42s. 6d. per ton.

METAL MARKET.

NEW YORK, Friday Evening, May 3, 1895.

Gold and Silver.

Prices of Silver per Ounce Troy.

April.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.	May.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.
27	4.89¼	30⅛	66¼	.514	1	4.89¼	30¼	66¼	.511
29	4.89¼	30⅜	66⅛	.511	2	4.89¼	30⅜	66	.510
30	4.89¼	30⅛	66⅛	.511	3	4.89¼	30¼	66⅛	.511

Owing to the hitch in the peace negotiations silver has declined about a half penny. The Eastern banks having withdrawn from the market the demand has been light; sellers, however, have not pressed their holdings, and consequently prices have not receded as much as would ordinarily have occurred. The chances for a recovery in price are fairly good.

The United States Assay Office at New York reports the total receipts of silver at 89,000 oz. for the week.

Gold and Silver Exports and Imports.

At all United States Ports, March, 1895, and Years 1895 and 1891 in coin and bullion:

	Gold.		Silver.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
Mar..	$3,135 219	$7,258,621	$3,790,074	$547,985	I. $881 313
1895..	30,630,241	14,122,157	10,618,276	1,606,156	E. 26,520,204
1894..	8,509,387	3,938,041	12,466,681	2,426,791	E. 14,611,256

Imports and exports of gold and silver in ores for the three months to March 31st are reported as below:

	Gold.		Silver.	
	1894.	1895.	1894.	1895.
Imports	$140,724	$138,237	$1,641 375	$2,216,262
Exports	7,438	.....	79,365	.....
Excess, Imports	$133,285	$138,237	$1 562,010	$2,216,262

These imports and exports in ores are not included in the table of exports and imports of coin and bullion given above.

The statement includes all United States ports, the figures being furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York

For the Week ending May 3d, 1895, and for Years from January 1st, 1895, 1894, 1893 and 1892:

	Gold.		Silver.		Total Excess. Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$290,986	$708,035	$546,365	$18.437	E. $110,880
1895..	31,553,595	15,845,377	10,671,419	477.637	E. 25,902,030
1894..	21,315,304	5,520,336	14,040.939	513,997	E. 29,321,910
1893	51,673,606	5,623,076	10,999,177	941,928	E. 56,108,779
1892..	22,991,173	5,822,072	8,874.665	502,244	E. 25,541,522

Of the gold imported for the week, $526,000 came from France, $173,000 from England, and the balance from the West Indies; the silver came from the West Indies and South America. The gold exported was chiefly foreign coin, and went to the West Indies, the silver went to London. In addition to the amounts noted above, a shipment was reported of $104,220 French coin in transit to the West Indies.

FINANCIAL NOTES OF THE WEEK.

Business continues to improve quietly and steadily, but without any special events to mark its course upward. The increase in the amount of exchanges and the growing demand for money from local banks are perhaps the features which are just now best defined. The railroads continue to show an improvement in earnings, and to this rule there are very few exceptions. The movement of freight from the manufacturing centers is larger than for two years past. A notable fact is that the Pennsylvania Railroad Company—whose lines, from their position and extent, represent and depend upon the general prosperity of the country more than those of any other company—not only reports a good increase in earnings, but has been able to continue its 5% dividend rate without reduction. Railroad traffic and the demand for raw materials are unfailing indicators of the condition of business, and both now point to continued improvement.

Prices of all the great staples continue to show an upward tendency, and there is little doubt that the lowest point has been passed, and that we shall not see again for some time quotations ruling at such points as they reached last year. At the same time it must be remembered that the whole drift of our time is towards lower prices, and that the extreme reductions produced in periods of panic and restricted consumption are never wholly recovered. The causes operating to produce a reduction are too numerous and too complex to be summed up in a paragraph, though the concentration of capital, constant improvements in methods of manufacture, cheap and rapid transportation and the continued opening of new sources of production may be named as the chief ones. The growth of competition, both individual and international, and the tendency to develop and utilize national resources and to increase production so fast that consumption cannot keep pace with it, constitute one of the serious problems of our age.

Speculation continues to increase in activity, as our market reports show, in all directions. It is most manifest, naturally, on the stock exchanges where dealings are becoming more extensive and prices are rising. Buyers who a short time ago would touch nothing but the highest class of securities are now going into the speculative stocks, which have been entirely neglected, and the exchanges no longer report "only a broker's market," since the "outside" buying is becoming common again.

There is less excitement in the silver market, now that the prospect for demand in the near future can be more accurately estimated. There is no doubt that a considerable part of the Chinese war indemnity payments will be raised by loans in Europe. The tangible security which China has to offer for such a loan is her customs collections, and good authorities estimate that under proper management these could be made to provide for interest charges and a sinking fund for a loan of $150,000,000. It is probable that such a loan could be placed now with little difficulty, especially if the payments were spread over three or four years. It is very likely, however, that the Chinese government does not appreciate its opportunity, and will injure its credit by trying to negotiate small loans from time to time, obtaining the money on much harder terms than it could secure now for a single issue.

The payment of gold into the Treasury in exchange for notes has continued to some extent. The demand is chiefly for small bills, and may be taken to mean an increased activity in local and retail trade.

The total receipts of the United States Treasury in the month of April were $24,247,836. This was less by $1,222,739 than the receipts for March. The experience of a number of years has shown that April is always a month of light receipts, and already in May an increase begins to be manifest. The payments in April were $32,952,690, or $8,704,854 in excess of the receipts. Of the total payments it is to be noted that $11,986,083, considerably over one-third, were for pensions.

An important change has been made in the Philadelphia Mint through the enforced resignation of Superintendent Townsend and Chief Coiner Steele. The new superintendent of the mint is to be Mr. Herman Kretz, who has been for some time in charge of the appointment division of the Treasury Department in Washington. Mr. Kretz has had a long experience in business and is said to be a strict disciplinarian and an acute and energetic business manager. Mr. W. E. Morgan, now examiner of the Mint, is to succeed Mr. Steele as chief coiner. These changes are said to be the result of a determination on the part of the President to remove the mints from all connection whatever with local or State politics and to insist that the heads of the establishments, as well as the subordinates and workers, shall be appointed on a non-political basis, and the mints operated as strictly business institutions.

The Southern sound money convention at Memphis promises to be well attended, and a number of important men have agreed to be present and make addresses, while nearly all the commercial bodies in the chief Southern cities will send delegates. The convention will meet on May 23d. To counteract the effect of this convention a call has been issued for a free silver meeting also to be held in Memphis, to which delegates are invited to attend from Tennessee. This convention is to meet June 11th.

The statement of the United States Treasury on May 2d shows balances in excess of outstanding certificates as below, comparison being made with the corresponding day of last week:

	April 25.	May 2.		Changes.
Gold	$90,762,410	$91,217,272	I.	$454,862
Silver	21,065,339	21,80 ,372	I.	735,033
Legal tenders	44,402,760	42,152,792	D.	2,249,968
Treasury notes, etc.	26,783,788	27,185,354	I.	401,566
Total	$183,014,317	$182,355.810	D.	$658,507

Government deposits with national banks on the same date amounted to $15,392,355, a decrease of $75,408 during the week.

Total United States Treasury notes issued under act of July 14th, 1890, in general circulation and in the Treasury, $149,597,280. Against these are held 25,506,979 coined standard silver dollars and silver bullion purchased at a cost of $124,107,305, making a total of $149,614,284.

The receipts of the United States Treasury for the week ending April 27th for three years past were as follows:

	1893.	1894.	1895.
Customs	$3,007,439	$2,419,555	$2,906 161
Internal revenue	2,815,351	2,363,413	2,625,061
Miscellaneous	240,569	1,179 933	73,704
Total	$6,063,349	$5,932 904	$5,605,232

The receipts for the week show a decrease of $249,370 from those of the preceding week this year.

The following is the official statement of coinage executed at the Mints of the United States during the month of April and the four months ending April 30th, 1895:

Coins.	April. Pieces.	April. Value.	Four months. Pieces.	Four months. Value.
Double eagles	115,925	$2,318 500.00	553,244	$11,864,880.00
Eagles	215,080	2, 50,800.00	308,845	3,088,450.00
Half eagles	34,000	170,000.00	478,817	2,794,085.00
Quarter eagles	.. ..	.....	35	87.50
Total gold	365,005	$4,639,300.00	1,380 941	$17,347,502.50
Stand. dollars	200,000	200,000 00	700,290	700,290.00
Half dollars	366,000	183 000 00	1 612,290	806,145.00
Quar. dollars	568,000	142,000.00	2,560,290	610,072.50
Dimes	700,000	70,000.00	870,290	87,029.00
Total silver	1,834,000	$595,000.00	5,743,160	$2,233,536.50
Five cents	1,726,507	86,325.35	4,172,854	208,642.70
One cent	4,344 714	43,447.14	11,182,606	111 826.06
Total minor	6,071,221	$129,772.49	15,355 460	$320,468.76
Total coinage	8,270,226	$5,364,972.49	22,479,561	$19,901,507.76

In addition to the coinage reported above for April there was coined for Ecuador $80,000 in silver 20-cent pieces.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending April 27th, gives the following totals, comparisons being made with the corresponding weeks in 1894 and 1893:

	1893.	1894.	1895.
Loans and discounts	$425,900 800	$460,902,300	$480,564,600
Deposits	432,224,600	578,853,800	516,6 0,500
Circulation	5.6 6,700	10 159,800	13,199 800
Specie	70,702,400	99,467,300	68 263,300
Legal tenders	49 509,900	127,414,100	86,216,900
Total reserve	$120,212 800	$226,881,400	$154,420,800
Legal requirement	108,0 6,150	143,463,450	129,150,125
Surplus reserve	$12,156,150	$83,417,950	$25,270,675

Changes for the week were increases of $7,209,500 in total reserve, $1,266,100 in specie, $5,643,400 in legal tenders, $6,415,200 in deposits, decreases of $216,800 in loans, and $17,200 in circulation. The statement shows some changes not quite easy to explain. There has been no check in the withdrawal of money for interior cities, but there are reports of transfers here of some balances from abroad. If true, this would account for some of the changes noted.

The Bank of England on Thursday, May 2d, reported its total gold holdings at £37,036.271, an increase of £5,096,151 as compared with the corresponding date last year. The Bank shows a net decrease in gold of £456,011 during the week, due chiefly to heavy exports and comparatively light receipts. There has been, however, a renewed movement of gold from Paris to fill engagements resulting from the continued buying of African stocks. There has been some buying of gold in London by the syndicate which handled the American loan. On Tuesday £200,000 were shipped from London for New York, and it is understood that £500,000 more will follow to-morrow. The demand on the Austrian loan is believed to have been all provided for, and no more gold is expected to go out on this account. The Bank's proportion of reserve to liability is this week 65·96%, against 67·55% last week and 65·75% a year ago.

An increased buying of stocks is reported, which is now passing from the African mining market to the railroad and other securities which have been comparatively neglected for some time past. This has had a strong influence on the market for Americans in London, and a buying movement has apparently set in place of the selling which had continued for nearly a year. The increase in railroad earnings reported from this side and the fact that the Pennsylvania Railroad Company has just decided to pay its usual dividend have had a very favorable effect on the American market.

The Bank of France on Thursday, May 2d, reported its total specie holdings at 2,157,581.000 fr. gold, and 1,235,307.000 fr. silver, an increase of 207,326.891 fr. gold and a decrease of 39,685,077 fr. silver as compared with the corresponding date last year. Changes for the week were a decrease of 8,425,000 fr. gold, and an increase of 2,675,000 fr. silver. The gold lost was chiefly foreign gold shipped to London.

For convenience of comparison, we have grouped together in the table below the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced

to dollars, and comparison is made with the holdings at the corresponding dates last year:

	Gold.	Silver.	Total.
Asso. Banks of New York 1894	.....	.....	$68,203,900 89,467,300
Bank of England 1894	$185,181,355 159,701,600	....	185,181,355 159,701,600
Bank of France 1894	311,516,200 352,050,855	$247,061,400 254,998,415	658,577,600 607,049,270
Imp. Bank of Germany 1894	....	....	268,530,000 218,850,000
Austro-Hungarian Bank 1894	93,030,000 51,309,000	68,059,000 81,831,000	161,089,000 133,140,000
Netherlands Bank 1894	21,403,000 21,951,000	35,409,000 35,081,000	56,803,000 57,042,000
Belgian National Bank. 1894	....	....	24,241,000 22,203,000
Bank of Spain 1894	40,021,000 39,594,000	62,468,000 42,193,000	102,489,000 81,783,000
Bank of Italy 1894	59,875,000	11,200,000	71,075,000 .....
Imp. Bank of Russia 1894	274,075,000	53,530,000	327,605,000 .....

The return for the Associated Banks of New York is of date April 27th; all the others are of date May 2d, except the Bank of Italy, whose return is dated March 10th, and the Bank of Russia, March 1st-13th. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports its gold only, not considering silver at all. The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately.

Shipments of silver from London to the East for the year to April 19th are reported by Messrs. Pixley & Abell's circular as below:

	1894.	1895.	Changes.
India	£1,997,835	£1,316,830	D. £681,005
China	1,123,701	947,393	D. 176,308
The Straits	272,400	217,105	D. 55,295
Japan	135,800	105,000	D. 30,800
Total	£3,529,736	£2,586,328	D. £943,408

Shipments reported for the week were £83,200 to Bombay. Receipts for the week were £11,000 from the West Indies and £65,000 from New York.

Indian Exchange was comparatively quiet this week, and the allotment of Council bills in London on Wednesday showed no increase in demand, the usual 60 lakhs were offered and were taken, but without any increase in prices. There is at present very little demand for silver for shipment to India. The buying of silver and the selling of gold in that country has been brought to a standstill by the rise in silver prices, and, as the native mints, which continue in operation, are pretty well supplied with bullion the demand is not likely to be active for some time to come. A large part of the purchases of Council bills continue to be on Chinese account, and a cessation in this demand, which is likely to come at any time, would mean an immediate fall in exchange.

The "Novoe Vremya," of St. Petersburg, states that the following are the principal features of the Russian Finance Minister's scheme authorizing commercial transactions to be concluded on a gold basis which was approved in principle by the united sections of the Council of the Empire April 18th, and to the brief cable report of which reference was made in this column at the time: All payments may be made in gold at the rate of exchange for the day if the consignees so agree; all commercial transactions by means of bills of exchange, contracts, bills of sale, mortgage bonds, etc., may be concluded on a gold basis, a thing formerly prohibited; permission to conclude commercial transactions on a gold basis does not extend to private citizens or to the peasant class; the rate of exchange for credit notes is fixed by the Bourse Exchange list; the State bank has not the right to repay in credit notes at the current rate of exchange deposits made in gold coin. The scheme, says the "Novoe Vremya," also provides for the payment in the near future of the excise duties on sugar and naphtha, and later of other Crown revenues in gold. The exchange for payments to the Crown in gold instead of in credit notes will be fixed by the Finance Minister for one month, or three months, according to circumstances.

Domestic and Foreign Coins.

The following are the latest market quotations for the leading foreign coins:

	Bid.	Asked.
Mexican dollars	$0.52½	$0.53½
Peruvian soles and Chilean pesos	.52	.53½
Victoria sovereigns	4.87	4.90
Twenty francs	3.88	3.92
Twenty marks	4.78	4.82
Spanish 25 peseta	4.86	4.89

Other Metals.

Copper.—Again the market has been exceedingly firm, and higher prices can be recorded. The demand for fine copper continues to be exceptionally strong, and May and June deliveries are almost unobtainable, as most of the electrolytic works have booked orders ahead for several months, and are fully sold. Lake copper can practically no longer be procured below 10c., and this is still somewhat above the views of buyers. As 9·90 has already been refused, no doubt the 10c.-basis will soon be established. Exports continue on rather a large scale. Navigation on the lakes opened on April 29th, and the first boats may be expected in Cleveland and Buffalo early next week. After their arrival, the very low stocks of most of the manufacturers will be replenished. For casting copper a very much better demand has now also set in, and we quote 9¼@9⅜, according to brand and quantity. In Europe the tendency has continually been an upward one for all the different descriptions of copper. G. M. Bs. opened very firm at £40 15s.@£41 for spot, and advanced from day to day, the closing price being £41 2s. 6d.@£41 5s. for spot, and 7s. 6d. more for three months prompt. For the finer grades of copper full prices had to be paid. Some sales of Lake copper are reported on the parity of 9¾, f. o. b. New York, but nothing is any longer obtainable thereat. Great activity prevails in the Birmingham district among all the manufacturers, who up to a few weeks ago worked only at about three-quarters of their capacity, while everybody is now working full, and even extra shifts have had to be laid in. Ship-building has materially improved in Europe, and for electric purposes, a large demand continually exists. For refined and manufactured sorts, we quote: English tough, £43 10s.@£44 11s.; best selected £44 5s.@£44 15s.; strong sheets, £50@£51, India sheets, £48@£48 10s.; yellow metal, 4½d. The copper statistics in Europe increased for the second half of April 500 tons, most probably on account of the heavy shipments from this side.

The report of the Bureau of Statistics of the Treasury Department gives the exports of domestic copper from the United States during the month of March as follows, in tons of 2,240 lbs.: Bars, pigs, ingots, etc., 4,300 tons; matte, 1,068 tons. Taking the matte at an average of 55% would make it equivalent to 587 tons of fine copper, so that the total exports for the month amounted to 4,887 tons of fine copper. Re-exports of foreign copper included 10 tons of metal and 162 tons of ores and regulus. Imports of foreign copper into the United States in March were 232 tons of bar and old metal and 259 tons of ores and regulus.

Messrs. Henry R. Merton & Co. estimate the total stocks of copper in England and France on April 16th at 50,080 tons; afloat from Chile and Australia, 3,700 tons, making a total of 53,780 tons. The stocks show an increase of 445 tons over the estimate for April 1st.

Copper Exports.—The exports of copper from the port of New York during the week ending May 3d, 1895, as reported by the New York Metal Exchange, were as follows:

Copper:		
Hamburg—Russia	Bars	10 tons
" "	Pigs	25 "
Baltic—Martello	Cakes	10 "
Rotterdam—Amsterdam	Plates	50 "
Havre—La Champagne	Ingots	100 "
Stettin—Venetia	Bars	28 "
Bremen—Lahn	Bars	20 "
Antwerp—Rhyniand	Ingots	5 "
Liverpool—Etruria	Bars	100 "
Havre—La Champagne	Bars	80 "

Exports of copper from Baltimore for the week ending May 3d are reported by our special correspondent as follows:

Rotterdam—Tampico	381 bars	67,331 lbs
" "	3,721 plates	78,400 "
" "	6,690 ingots	112,000 "

This is a total of 428 long tons of copper from New York and 115 tons of copper from Baltimore, making a total of 543 tons for the week. No exports of matte are reported.

Imports and Exports of Metals.—Imports of tin plates at the port of New York for the week ending April 26th were 34,574 boxes from the United Kingdom.

Exports of metals (other than copper) from the port of New York for the week ending April 26th are reported by the New York Metal Exchange as follows: 42 tons tin scrap to Holland; 46 tons old metal to Liverpool; 5 tons old metal to Glasgow; 2 tons old metal to Italy; 17 tons iron pipe to Russia; 25 tons sulphate of copper to Marseilles; 16 tons sulphate of copper to Lisbon.

Arrivals at Philadelphia for the week ending April 26th were: 2,750 tons iron ore from Cuba and 13,493 boxes of tin plates from the United Kingdom.

Imports at Baltimore for the week ending April 26th were: 2,600 tons iron ore from Cuba; 25 tons tin from London; 50 flasks quicksilver from London; 21,201 boxes tin plates from the United Kingdom.

Tin.—There has been decidedly more firmness in the market, and prices have hardened somewhat. Business has not been very large, but nevertheless, was pretty fair. Shipments for the month of April from the East Indies are cabled to us as being 4 000 tons, so that the statistical position continues to be rather an unfavorable one. Deliveries for the past week here were somewhat on a larger scale. We quote spot 14¾, and June and July 14¼c.

In London the market was rather active, although somewhat irregular. The opening quotation was £64@£64 2s. 6d. for spot, and the closing quotations are £64 7s. 6d.@£64 10s. for spot, and £64 15s.@£65 for three months prompt.

Shipments of tin from the Straits for the second half of April were 1,620 tons, of which 1,200 tons were for London, 220 tons to Europe, and 200 tons to the United States. The total shipments for the month of April were 4,060 tons, an increase of 1,200 tons over April, 1894. According to the statistics collected by the New York Metal Exchange, the total shipments from the Straits and Australia during April were 4,330 tons; shipments from London and Holland to the United States were 1,010 tons; consumption for the month is estimated at 3,820 tons, of which 1,500 tons were in the United States. Stocks at the close of the month are estimated as below, in tons of 2,240 lbs.:

	In store.	Afloat.	Total.
London	11,634	3,693	14,727
Holland, Banca and Billiton	2,710	1,100	3,810
Straits	1,100	315	1,415
U. S. ex. Pacific ports	3,121	805	3,926
Total May 1	17,965	5,913	23,878

As the total visible supply April 1st was 23,076 tons, this shows an increase of 802 tons during the month. There is also a large increase, 5,571 tons, over the visible supply reported a year ago.

Lead has been quiet, and is without change at 3⅞. The pressure from the West to sell has abated. In Europe, prices are rather lower. Spanish lead being to-day quoted at £9 16s. 3d.@£9 17s. 6d., and English lead 2s. 6d. more.

The Bureau of Statistics of the Treasury Department reports the imports of foreign lead into the United States during the month of March at 7,546 tons. Exports of lead for the month were 1,000 tons.

The New York Metal Exchange estimates the arrivals of lead at the port of New York in April at 7,050 tons, of which 2,050 were from Europe and 5,000 tons were from Mexico. The exports of Mexican lead in bond for the month were 1,050 tons to Europe and 100 tons to Canada. The quantity withdrawn from warehouse for consumption during April was 4,390 tons, leaving the stock in bond on April 30th about 5,565 tons.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead this week is firm and firmly active at 2·87½ for Missouri and chemical brands, while argentiferous and corroding metal has been quietly selling for late May and June delivery at 2·90. There seems to be considerably more inquiry for lead, and at the same time consumers appear to have more confidence in the stability of the metal than has been apparent for sometime past.

Spanish Lead Market.—Messrs. Barrington & Holt report as follows under date of April 17th: Prices in England have risen during the past week 6s. 3d. per ton for both argentiferous and soft lead, while silver has gone up 2⅛d. per oz. Exchange on London has also risen 90 centimos per £1 sterling. Owing to these rises the average local price for pig lead on wharf is considerably higher than that last reported. We quote 45·69 reales per quintal of lead as against 39.56 last month; this, taking exchange at 27·69 pesetas per £1, is equivalent to £9 3s. 9d. per ton of 2,240 lbs., f. o. b. Carthagena, the silver to be paid at 13 reales per oz. Exports of pig lead from Carthagena during the past few weeks have been 1,362,869 kilos. to France; 1,149,709 kilos. to the United Kingdom; 249,687 kilos. to Holland; a total of 2,762,265 kilos. For the three months ending March 31st, the total exports from this port were 7,316,518 kilos. argentiferous lead; 294,000 kilos. desilverized lead, and 750 kilos. bar silver. We quote lead ore as follows f. o. b. Carthagena: Potter's ore, 8s. 3d. per cwt.; Linares ore, 6s. 3d. per cent. for sulphide, and 4s. 2d. for carbonate.

Spelter is dull with very little doing. The quotation in St. Louis is $3.05, and in New York $3.30.

Good merchantable brands in London are quoted £14 2s. 6d., and specials at £14 5s.

Antimony continues dull; Cookson's, at 8c.; Hallett's, 7c., and outside brands, 6¾.

Aluminum.—The standing quotations, according to producer's price list, are given below, the three prices named being respectively for small lots, for orders of 100 lbs. or over, and for orders of one ton or over: No. 1 metal, over 98% pure, in ingots ready for rolling, etc., 60c., 58c. and 55c. per lb. No. 1 metal, in ingots for remelting, 55c., 52c. and 50c. per lb. No. 2 metal, over 94%, but less than 98%, in ingots for remelting, 53c., 50c. and 48c. per lb. Rolled sheets, No. 1 metal, 80c.@$4.40 per lb., according to size and thickness. Wire, $1@$2.50 per lb., according to gauge. Tubes, from 14c.@$3.15 per linear foot, according to thickness and diameter. Castings, from 90c. per lb. up, according to pattern and size of order.

Abroad the price is fixed by the Neuhausen Company, which quotes 5 fr. per kilo.—equivalent to 45c. per lb.—at works in Switzerland for small orders; a discount is made on large sales. Quotations in Paris, for large orders, are 5 fr. per kilo. for ingots; 6 fr. per kilo. and upwards for sheets; 10 fr. per kilo. for wire, 0·5 mm. and over; 15 fr. per kilo. and upwards for sheets.

Bismuth.—Quotations are nominally $2@$2.50 per lb., according to size of order.

Magnesium.—The maker's prices are as follows, at works in Germany: 27 marks per kilo.—equivalent to $2.94 per lb.—for ingots; 26 marks per kilo. for bars; 36 marks per kilo. for powder, and 38 marks for ribbon and wire. For orders of less than 10 kilos., 1 mark per kilo. must be added for ingots or bars, and 2 marks for wire, etc.

Nickel.—The price is somewhat unsteady, but quotations given are 36@39c. per lb.

London quotations are 14@16d. per lb. In Paris pure metal is quoted at 4·50 fr. per kilo. (equivalent to 39c. per lb.); copper-nickel alloy, 50% nickel, 2 50 fr. per kilo.

Platinum.—Quotations abroad are firmer at rates equivalent to $10@$10.50 per ounce.

For chemical ware, best hammered metal, Messrs. Eimer & Amend, New York, furnish the following quotations, the prices given being respectively for orders of over 250 grams; for orders of over 100 grams and less than 250 grams, and for orders of less than 100 grams: Crucibles and dishes 41c., 43c. and 45c. per gram. Wire and foil are 40c., 41c. and 42c. per gram. The current retail price for crucibles is 50c. per gram.

Quicksilver.—Quotations are $38.50 per flask, New York. London prices are £7 per flask, with £6 17s. 6d. quoted from second hands.

Sodium.—In England the makers' price is equal to 90@90c. per lb., according to quantity. Occasional sales are made here, usually of small quantities on private terms.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, May 3.

Heavy Chemicals.—There is a better feeling in this market, due to the improved business outlook. Actual trading has not increased much, but the expectations of greater activity in the near future give a firmer tone to the market. Caustic soda has been in fair demand for spot and prompt delivery at unchanged prices. Carbonated soda, ash and alkali continue in fair inquiry, and sellers are making no great efforts to book contracts for extensive delivery at present prices. Bleaching powder has continued in good demand, and several sales are reported. The same may be said of sal soda. We quote this week: Caustic soda, 60%, 2·10@2·20c. for spot; other tests, futures, 1·95@2·10c. Carbonated soda ash, 48%, is 1·10@1·25c., according to quantity and delivery. Alkali, 48%, is ·90@1c., with special makes at 1@1·05c. Bicarb. is 1·80@2c. for spot. Bleaching powder is $1.85@$1.95. Sal soda, 65@70c.

Acids.—The usual jobbing business is doing in this market. Consumers are taking just enough acid to meet their current wants. We quote per 100 lbs. in New York and vicinity, in lots of 50 carboys or more: Acids, acetic, $1.40@$1.65 (in barrels). Muriatic, 18°, 75@85c.; 20°, 90c.@$1.15; nitric, 36°, $3.25@$4; 40°, $4@$4.50; 42°, $4.50@$5.25. Mixed acids according to mixture; oxalic, $7@$7.50. Sulphuric, 60°, 60@70c.; 66°, 70@85c. Blue vitriol is quoted at $3.50@$3.75.

Brimstone.—The market for Sicilian brimstone is dull and depressed. Very little is doing. Quotations for best unmixed seconds are as follows: On the spot, $16; future shipments, $15.25. Best thirds are 50c. less.

Messrs. Mortimer & Wisner, the well-known brokers of this city, send us their monthly statement of nitrate issued under date of May 1st:

	1895.	1894.	1893.
	Bags.	Bags.	Bags.
Imported into Atlantic ports from West Coast S. A., from Jan. 1, 1895, to date	305,006	157,185	192,151
Imported into Atlantic ports from Europe, from Jan. 1, 1895, to date	.....	.....	16,712
	305,006	157,185	208,863
Stock in store and afloat May 1, 1895, in New York	73,215	20,403	33,166
Boston	8,500	.....	1,500
Philadelphia	420	.....	.....
Baltimore	5,000	500	.....
Norfolk, Va	700	.....	.....
Charleston	2,000	.....	.....
To arrive, actually sailed	190,000	223,400	265,000
Vis. supply to Aug. 15, 1895	279,835	244,303	299,666
Stock on hand, Jan. 1, 1895	58,367	44,938	15,454
Deliveries past month	87,303	44,986	56,578
Deliveries since Jan. 1 to date	273,538	181,220	189,651
Total yearly deliveries	.....	701 202	754,560
Prices cur., May 1, 1895	1.60	2·30@2·32½	2¼c.

Included in the deliveries of 1893 are 9,500 bags shipped to European ports.

Fertilizing Chemicals.—There is no change to report of this market. The demand from the North continues fairly good, and sales are daily made which, though individually small, yet aggregate a good volume of business. Our quotations are as follows this week: Sulphate of ammonia, gas liquor spot, $3; shipments, $2.95; bone, $2.90. Dried blood, high grade, $1.95@$2; low grade, $1.80 per unit. Azotine, $1.90. Concentrated phosphate (30% available phosphoric acid), 70@72½c. per unit. Acid phosphate, 13% to 15%, av. P_2O_5, 57c. per unit at seller's works in bulk. Dissolved bone black, 17% to 18%, P_2O_5, 90c. per unit. Acidulated fish scrap, $12, and dried scrap with few or no sales, nominally $21 f. o. b. fish factory. Tankage, high grade, $19@$20; low grade, $18@$19. Bone tankage, $21; ground bone, $19@$20. Bone meal, $21@$22.

In lots of 50 tons on contracts we quote, per 100 lbs.: Double manure salts, 48-53% (basis of 48%): New York, Boston and Montreal, $1.10; Philadelphia and Norfolk, $1.12½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.15. Sulphate of potash, 90%, and minimum, 96% respectively (basis of 90%): New York, Boston and Montreal, $2.08@$2.09; Philadelphia and Norfolk, $2.10¼; Charleston, Savannah, Wilmington, N. C., and New Orleans $2.13.

Muriate of Potash.—Quotations for lots of 50 ton, are as follows: 80-85% and minimum 95%, respectively (basis of 80%): New York, Boston and Montreals $1.78; Philadelphia and Norfolk, $1.80¼; Charleston-Savannah, Wilmington, N. C., and New Orleans, $1.83.

Kainit.—Prices for kainit (minimum 23%) are as follows for invoice and actual weights respectively, New York, Boston and Philadelphia, $8.80; Norfolk, $9.15; Charleston, Savannah, Wilmington, N. C., and New Orleans, $9.55.

Nitrate of Soda.—We quote this week: on the spot, $1.60@$1.62½; near by arrivals, $1.65; futures, $1.70@$1.72½.

Liverpool. April 24.

(Special Correspondence of Joseph P. Brunner & Co.)

The improvement which is noticeable in several branches of trade has not yet extended to the chemical market, which is still far from encouraging so far as fresh business is concerned. Soda ash is inactive in spite of low prices. The nearest spot range for tierces is about as follows: Leblanc ash, 48%, £3 10s.@£3 15s. per ton; 58%, £3 15s.@£4 per ton; Ammonia ash, 48%, £3@£3 5s. per ton; 58%, £3 5s.@£3 10s. per ton, net cash. Bags 5s. per ton less. Soda crystals meet with an indifferent sale and are easier at about £2 3s. 9d. to £2 5s. per ton, less 5% for barrels. Caustic soda is inactive and values are slightly lower, the spot range being about as follows: 60%, £6 7s. 6d.@£6 10s. per ton; 70%, £7 7s. 6d.@£7 10s. per ton, net cash; 74%, £8 7s. 6d.@£8 10s. per ton; 76%, £9 5s.@£9 10s. per ton, net cash.

Bleaching powder does not attract much attention from buyers, but at the same time there is little offering outside the "Union" makes. For hardwood packages £7@£7 5s. per ton net cash may be called the nominal spot range, according to export market. Chlorate of potash is inquired for, although not much actual business is reported, as buyers' and sellers' ideas of prices do not coincide. Makers are firm at 4¼d. per pound, for any position, while some resellers are prepared to shade this figure to a slight extent.

Bicarb. soda is without change, the best quality being firmly held for £6 15s. per ton, less 2½% for one cwt. kegs, with the usual allowance for larger packages. Sulphate of ammonia shows a further decline as buyers hold aloof. The nearest spot value is about £10 5s.@£10 10s. per ton, less 2½% for good grey, 24 and 25%, in double bags, f. o. b. here, according to quality. Nitrate of soda has eased off to £8 10s.@£8 15s. per ton, less 2½% for double bags, f. o. b. here, as to quality. A rather better business is reported at the decline. Carb. ammonia, lump, 3½d. per pound; powdered, 3¾d. per pound, less 2½%.

PETROLEUM.

NEW YORK, Friday Evening, May 3, 1895.

The course of the petroleum market this week has been a steady decline in prices and a decrease of speculative activity. In this city there were no transactions in pipe line certificates. Oil City quotations for certificates during the week were as follows: April 29th, $2.05@$2.08; April 30th, $1.95@$2; May 1st, $1.83½@$1.85; May 2d, $1.78; May 1st, $1.61@$1.61½. The decline to-day was caused by the Standard Oil Company reducing the price of credit balances to $1.70, a drop of 10 cents. A dispatch from Oil City to-day reported that the production of the McDonald field was 12,000 barrels, runs 68,070, shipments 66,478 bbls. Sisterville runs 4,716.

A cablegram from Odessa, dated May 1st says, that the stocks of crude petroleum in the Trans-Caucasian region on April 1 amounted to 9,697,300 poods, compared with 8,131,900 on March 1. The output for April was 3,631,700 poods.

MINING STOCKS.

Complete quotations will be found on pages 430 and 431 of mining stocks listed and dealt in at:

New York.	Denver, Colo.	Salt Lake, Utah.
Boston.	Aspen, Colo.	London, England.
Baltimore.	Colorado Springs.	Paris, France.
Philadelphia.	Duluth, Minn.	Mexico.
San Francisco.	Helena, Mont.	Shanghai, China.
N. Y. Coal Stocks.	N. Y. Industrials.	Valparaiso, Chile.

NEW YORK, Friday Evening, May 3d.

Although compared with a few months ago the mining stock market is quite active, yet there has been some decrease in the interest shown by the public last week. Prices, however, are fairly well maintained.

The Comstocks with but few exceptions have been very quiet this week. Comstock Tunnel stock was by far the most active, and 17,500 shares changed hands at 10@15c.; $10,000 worth of the bonds was sold on a basis of 14@15% of their face value. Consolidated California & Virginia shows sales of 2,600 shares at $3@$3.25, though at the close $2.90 was bid for it. Other sales were as follows: 200 shares of Hale & Norcross at $1.50@$1.60; 100 shares of Chollar at 49c.; 100 shares of Ophir at $1.75; 400 shares of Yellow Jacket at 40@45c., and 50 shares of Union Consolidated at 46c.

Of the California stocks Brunswick Consolidated continues to show some activity and 6,500 shares were sold at 15@18c. Quicksilver, preferred, was quiet this week, and only 120 shares were sold at $19@$19.50. There was a solitary transaction of 100 shares of Standard at $3.

The Colorado shares were again the most popular. Leadville Consolidated was steady at 16@18c., with total sales for the week of 3,100 shares. Portland was firm at 70@75c., with sales of 1,200 shares. Lacrosse was not as active as usual: the price was stationary at 10c., though sales amounted to but 900 shares. There was a sale of 300 shares of Little Chief at 19c.; of American Flag 600 shares changed hands at 5c. Transactions in Iron Silver aggregated 1,000 shares at 28c. Of Mollie Gibson 800 shares were traded in at $1.65.

Two old Idaho stocks have returned to the exchange this week, Castle Creek with sales of 700 shares at 2@3c., and 100 shares of Holyoke at 2c.

There was a sale of 500 shares of Alice at 45c.

Of Kingston & Pembroke 1,073 shares were sold at 20@25c.

Other sales were: 100 shares of Phoenix of Arizona at 10c.; 100 shares of Eureka Consolidated at 35c.

Boston. May 2.

(From Our Special Correspondent.)

The copper stocks have been active and higher the past week under the influence of continued buying by parties who believe in higher prices in the near future. The firmness of the market for ingot copper is undoubtedly a stimulus to the market, and the spirit of speculation is getting to be widespread, and buyers who would not touch copper stocks when prices were down are now the fiercest bulls in the situation. There is also some investment buying for dividends which helps the market and gives a healthy tone to the speculation.

As usual, the Montana stocks lead in activity, and perhaps as a bluff to answer the severe criticism of the "Engineering and Mining Journal" last week, Boston & Montana scores an advance from $40¾ to $42¾, with sales of over 8,000 shares, the closing sale to day being within $¼ of the highest for the week. There is talk of an increased dividends, but there is no real ground for the rumor. Butte & Boston also advanced from $12½ to $14 on sales, aggregating about 12,000 shares, and is talked for $20 in the near future.

The Lake superior stocks have shared in the activity and advance. Franklin touched $15½ with reaction to $14¾ only. Kearsarge sold up to $10 closing a fraction less. Osceola advanced from $23 to $25¾ with reaction of $¼ only in last sale. Atlantic hardly feels the boom as yet but advanced ½ to $11 and Wolverine sold at $5. Calumet and Hecla sold at $280 and $282 with last sales at the latter figure. Quincy sold at $108 dividend on and at $104 exdividend advancing to $107½ in later dealings. The scrip responded with sales from $52¼ to $57. Tamarack continues the weak spot in the market selling down to $125 recovered to $130 with later sales at $128. Tamarack, Jr. advanced from $13 to $14½ and is in good demand at the highest figures.

The market closed firm, with stocks in good demand.

Colorado Springs.

BY TELEGRAPH.

Messrs. Gardner & Co. wire us the following quotations for the week ending May 2d:

Name of Company.	26	27	29	30	1	2
Anaconda	.39	.39	.38	.38½	.38	.37
Argentum-Juniata	1.06	1.05	1.05	1.02	1.05	1.04
Isabella	.20	.20	.20	.20	.19	.19½
Mollie Gibson	1.06½	1.05	1.08	1.10	1.13	.13
Portland	.70	.70	.70½	.70	.70	.70
Union	.13⅝	.14	.14½	.14½	.14	.14

Salt Lake City, Utah. April 27.

(Special Report of James A. Pollock.)

The mining share market this week was not quite as active as it has been for some time past. There was a good deal of trading, but the strong demand for all classes of stocks has apparently ceased for the present. I do not regard this lull in the market as in any sense discouraging, but am of the opinion that it is taking a temporary rest that it may gather strength for renewed activity, and that it is only a question of time when a broadening interest will bring about advances that will shortly make present prices seem low. When stocks like the Bullion-Beck, Centennial-Eureka, Horn Silver, Mercur, etc., can pay dividends netting from 20 to 40% annually, these securities, on the natural turn of such investments, are bound to go higher.

Alliance sold at $1.10 and closed at $1 bid and $1.20 asked. The work of sinking the shaft goes steadily on, but no developments of note are expected before July 1st. Anchor has been very sluggish of late; small blocks sold during the week at $3.30. Bogan was freely offered, and there seems to be a general disposition to sell. Centennial-Eureka was in demand at $42, but all stock seems to have been withdrawn from the market. Dalton was freely offered at 1½c., but no buying; the assessment becomes delinquent May 10th.

Daly trading has decreased, caused by an abundance of stock being offered, and a general disposition of holders to accept profits on the recent advance. Shares closed at $6.50 bid and $7.25 asked. There is not much Daly-West on the market. The shares sold during the week at $7, and that price was asked at the close with $6.75 bid. The shares seem to be rather high in spite of the excellent showing the mine is making. Horn silver advanced to $2.35 in the bidding, with limited transactions.

The property continues to be one of the heaviest shippers in the territory. Mammoth is beginning to show some indications of returning life, and I look for the shares to again enter the active list. There were frequent inquiries for Morgan, but they did not result in buying orders.

Mercur has declared the regular monthly dividend of 12½c. a share, amounting to $25,000, payable May 10th. This makes $50,000 in dividends this year, and $225,000 to date. The stock is in strong demand, as it has been for some weeks, but as the price advances the shares are closer held. Ontario is still in demand at $10.50 bid and $12.50 asked. The trading is limited and the advance in the shares due to the advancing silver quotations, and not to any new developments in the mine. Silver King was $13.75 bid and $14.50 asked. There are but a limited number of floating shares, and consequently the trading is restricted.

San Francisco. April 27.

(From Our Special Correspondent.)

The past week has hardly been an encouraging one for the brokers. Business was light, and there were few or no signs of the outside buying which has been promised us so often. We hear reports of increased activity in other exchanges, but it has not yet reached our market.

A quiet opening on Monday was followed by a similar state of inactivity through the week, and several attempts to get up a little excitement failed altogether. Under these circumstances it was not to be expected that prices would rise, and they were generally lower until yesterday, when a slight reaction was noted.

At the close prices were fairly steady, the net result of the week having been small, though the tendency was generally downward as noted. To-day's quotations are: For Consolidated California & Virginia, $3.00; Ophir, $1.65; Confidence, $1.50; Hale & Norcross, $1.30; Mexican, 81c.; Sierra Nevada, 81c.; Best & Belcher, 78c.; Crown Point, 62c.; Gould & Curry, 45c.; Savage, 30c.; Justice, 10c.

Bodie Consolidated share in the general tendency and declined to $1.20 at the close on light sales.

The case of the State of Nevada against the Occidental Consolidated Mining Company, a suit for the recovery of taxes levied against the defendant in Storey County in 1894, has been decided in favor of the plaintiff to the amount sued for—$1,300. In a similar case pending between the same parties, for taxes levied against the defendant in 1893, a judgment has been rendered in favor of defendant as on its merits, without costs.

The California Debris Commission has granted permits to mine by the hydraulic process to the Mount Gregory Mining Company, Mount Greory, El Dorado County; the Gold Deposit Mining Company, Kelsey, El Dorado County; the El Dorado Placer Company, Golden Valley, El Dorado County, and the Hard Times Mining Company, Forest Hill, Placer County. The following companies were authorized to build impounding dams: The Spring Tunnel & Spring Canyon Company, El Dorado County; the Day Dam Company, El Dorado County; the William Franklin Company, El Dorado County; the Iowa & Western Gold Mining Company, Placer County, and the Tiger Claim, Placer County. The dams are to be constructed of brush and stone, and, if satisfactory, permits to conduct hydraulic mining will be granted. All these washings will drain into the American River.

BY TELEGRAPH.

San Francisco, Cal., May 3d.—The opening quotations to-day were as follows: Best & Belcher, 70c.; Bodie, $1.05; Bulwer, 12c.; Chollar, 42c.; Consolidated California & Virginia, $2.90; Eureka Consolidated, 25c.; Gould & Curry, 43c.; Hale & Norcross, $1.45; Mexican, 75c.; Mono, 18c.; Ophir, $1.45; Savage, 27c.; Sierra Nevada, 75c.; Union Consolidated, 46c.; Yellow Jacket, 33c.

London. April 20.

(From Our Special Correspondent.)

The South African mining market has not been uniformly brisk during the past week, but, though there were a few periods of dullness, the total amount of business done was not much lower than usual. After the Easter holidays brokers found a good many buying orders waiting for them, and later on during the week orders recommenced coming from Paris. As a rule quotations are about the same as last week with the exception of British South Africas, which have advanced to £3 15s., and Rand mines, which have climbed to £32, chiefly on Paris buying.

In the West Australian market the sensation has been the collapse of Cashman's Brilliant Reward Company on the report from the manager that there is no reef on the property to work. This collapse is no surprise, for all who knew the facts did not attach any value to the expert's statement that a 4 oz. reef ran right through the claims. The shareholders have determined to purchase another property, but it is to be hoped that they will go about the business in a different way this time.

The Wentworth Company (New South Wales) is at present attracting a good deal of attention by the extraordinary output. During the five weeks ending March 3, the total output was 16,965 oz. of gold, and shortly afterward a 25% dividend was announced, bringing up the total dividends paid from the start to 100%. As the price of the £1 share is not more than 25s., and as it shows a strong tendency to drop, there is considerable suspicion of a gigantic unloading scheme on hand. In the American mining market DeLamars, Springdales and Holcombs have been dealt in and are strong.

The Harquahala Company appears to be in a very precarious condition. During December last the profit sank to £180, and in March the profit was not more than £30. There is talk of sending out an expert to report on the mine and to inquire into the probable future of the property.

It will be remembered that some two years ago the Amador Gold Mining Company, Limited (California) came to grief through losing its property which, it was alleged, had been transferred to the company without the consent of the owners. At the time, a new company called Jackson Goldfields, Limited, was formed to get hold of the property again. After two years' litigation this has at last been accomplished; but the terms of acquirement have not yet been ascertained.

The Silver King Mining Company, Limited, working silver mines at Calico, San Bernardino County, California, and the Mayflower Gold Mine, California, is in a somewhat parlous state. Last summer a preliminary agreement was made to amalgamate with the Waterloo Mining Company (American), working mines also in Calico, but the agreement has been cancelled by the latter company because the Silver King is conducting operations at a loss. During the year ending April 30, 1894, the silver mine made a profit of £6,325, but the gold mine incurred a loss of £9,615. The gold ore is so refractory that fully 60% of the assay contents is lost, and experts recommended the erection of a chlorination plant, a course which the directors could not pursue on account of shortness of funds. The debts in California have been increasing and the property was on the point of being jumped when one of the directors stepped in, paid the debts and is now engaged in transferring it to the reconstructed company. The new company will continue working the silver mine, but will allow the gold mine to lie by until a convenient time arises to raise the necessary capital to provide a chlorination plant.

Paris. April 21.

(From Our Special Correspondent.)

The notable feature of the week just closed has been a general rise in the copper stocks, managed by the Rio Tinto clique. That stock recorded an increase in price, in spite of the lower dividends paid for 1894, and all the other copper companies also shared in the advance. In other stocks Societe des Metaux had a sharp advance. There is a growing speculation in the nitrate stocks, in which there seems, by the way, but little reason for an advance in view of the prices of nitrates and the continued sale of new grounds. Nevertheless, Lagunas, Lautaro, Pacchajazpampa and Nitrate Railroads are all rising.

The foreign commerce of France for the three months ending March 31st is reported as follows:

	1894.	1895.
IMPORTS:		
Food	361,752,000	227,943,000
Raw materials	676,926,000	563,643,000
Manufactures	137,460,000	117,005,000
Total	1,176,138,000	908,591,000
EXPORTS:		
Food	143,086,000	125,722,000
Raw materials	169,506,000	198,478,000
Manufactures	401,079,000	434,281,000
Postal parcels	23,255,000	29,385,000
Total	736,926,000	787,866,000
Excess, imports	439,212,000	120,725,000

The Societe d'Economie Politique at its last meeting again discussed your currency situation. While there was some difference of opinion as to the best remedy, there was a general agreement that you would have no rest or permanent security until your government issues are withdrawn and a proper system of bank issues substituted. Mr. Raffalovich especially pointed out the dangerous situation of your Treasury issues, and the results which might follow were the Executive weak or doubtful as to maintaining the national credit.

Russia has lost one of her ablest financiers in M. Vishnegradski, who died last week after a notable career. The son of a priest, he began life as a teacher of mathematics. He first became known as a man of affairs in the organization of the exposition of Moscow in 1883, and later in the reorganization of the water service of St. Petersburg and of several of the railroads. He directed the finances of Russia through a difficult period, from 1887 to 1892, with great success. To him is due the policy of accumulating gold, and the progress Russia has made toward a resumption of specie payments and a great part of the improvement in the general condition. He was a master of the "Haute Finance." His successor, M. Witte, was trained by him, and was for years his assistant.

The estimate of the public revenue of France for 1895, on the basis of the taxes voted by the Chamber of Deputies, is 3,421,000,000 fr., while the expenses, on the same basis, will be 3,426,500,000 fr., leaving a deficit for the year of 5,500,000 fr. To meet this in part it is proposed to apply the seigniorage or profit on 8,000,000 fr. new silver coinage, which has been ordered to supply the deficit in small silver caused by the withdrawal of Italian coins from circulation last year. Meantime none of our ministers or deputies seem to think that reduced expenditures would prevent a deficit.

DIVIDENDS.

De Lamar Gold Mining Company, dividend No 16 of 1s. per share, and a bonus of 6d. per share paid at the London office, April 20th.

Iron Mountain Mining Company, Montana, paid a dividend of 2c. per share on April 15th.

Mercur Gold Mining & Milling Company, dividend No. 9, of 12½ cents per share ($25,000), payable May 10th.

Pennsylvania Railroad Company, regular dividend of 2½% semi-aanual, payable May 31st.

Victor Gold Mining Company, of Cripple Creek, Colo., has declared its 25th monthly dividend of 10c. per share, payable May 15th.

MEETINGS.

Anaconda Mining Company, annual meeting, at the office, Room 19 Tuttle Block, Butte City, Mont., May 21st, at 2 p. m.

Bald Mountain Alert Mining Company, annual meeting, at Central City, Colo., June 1st.

Basin & Bay State Mining Company, stockholder's meeting, at the office, in Basin, Mont., May 27th, at 2 p. m., for the purpose of voting on a proposition to dispose of certain mining property.

Centennial Gold Gravel Mining Company, annual meeting, at the office, in Gold Hill, Nev., May 6th, at 2 p. m.

Columbus & Hocking Coal & Iron Company, annual meeting, at the office in Columbus, Ohio, May 15th, at 2 p. m.

East Sierra Nevada Mining Company, regular annual meeting, at the office, No. 310 Pine street, San Francisco, May 13th, at noon.

Justice Mining Company, regular annual meeting, at the office, No. 309 Montgomery street, San Francisco, May 6th, at 1 p. m.

Maryland Gold Quartz Mining Company, annual meeting, at the office of Wells, Fargo & Co., Grass Valley, Cal., May 13th, at 7:30 p. m.

North Star Mining Company, annual meeting, at the office, in San Francisco, May 8th, at noon.

Original Empire Mill and Mining Company, annual meeting, at the office, No. 401 California street, San Francisco, at 1 p. m.

DIVIDENDS PAID BY MINING COMPANIES, MARCH AND YEAR, 1895.

NAME OF COMPANY.	Paid in March.	Paid in since Jan. 1.
Am. Dev. & Mg. Co., Mont.	.....	$24,340
Alaska Treadwell, Alaska	.....	75,000
Bald Butte, Mont	.....	12,500
Bangkok-Cora Bell, Colo	$6,000	18,000
Belden, F. E., Mica, N. H.	4,000	14,000
Bullion-Beck & C., Utah	25,000	100,000
Centennial-Eureka, Utah	30,000	90,000
Champion, Cal	.....	6,800
Con. Cal & Va., Nev	54,000	162,000
Copper Queen Con., Ariz	.....	50,000
Coptis, Nev	.....	1,000
De Lamar, Idaho	.....	100,000
Elkton, Colo	.....	7,500
Forepaugh, Colo	.....	16,000
Gold & Globe, Colo	3,750	11,250
Golden Fleece, Colo	.....	24,000
Hecla Con., Mont	15,000	45,000
Homestake, So. Dak	31,250	93,750
Hope of St. Louis, Mont	.....	10,000
Horn Silver, Utah	50,000	50,000
Iron Mountain, Mont	10,000	20,000
Jackson, Cal	.....	2,000
Kennedy, Cal	.....	96,000
Mayflower Gravel, Cal	10,000	30,000
Mercur, Utah	.....	25,000
Mollie Gibson, Colo	.....	50,000
Montana, Ltd., Mont	.....	82,500
Montana Ore Purchasing Co.	.....	40,000
Morning Star Drift, Cal	16,800	36,000
Mt. Rosa, Colo	.....	5,000
Napa Con., Cal	.....	10,000
Nugget, Colo	.....	5,000
Osceola Con., Mich	.....	50,000
Portland, Colo	22,430	44,860
Quincy, Mich	.....	200,000
Smuggler, Colo	.....	50,000
Standard, Cal	10,000	10,000
Victor, Colo	.....	40,000
W. Y. O. D., Cal	.....	3,000
Total	$288,230	$1,720,500

Readers of the "Engineering and Mining Journal" will confer a favor on the publishers if they will notify the "Journal" of any errors or omissions in the above table.

ASSESSMENTS.

Name of Company.	No.	Dinqt.	Sale.	Amt.
Brunswick Con., Cal	8	Apr. 20	May 15	$ .02
Crown Point, Nev	65	Apr. 16	May 7	.25
Eureka, Cal	3	May 8	.....	.25
Glencoe Con., Cal	....	May 21	June 18	25.00
Gold Point Con., Nev	23	May 1	May 18	05
Granite Hill, Cal	2	May 8	May 29	.01½
Grizzly Ridge, Cal	....	May 10	.....	.00¼
Harney Hydraulic, S. D.	26	Apr. 11	June 4	.05
Madera, Cal	4	Apr. 18	.....	.25
Magnet, Mont	5	May 15	June 15	.01½
North Banner Con., Cal	35	May 11	June 4	.03
North San Juan, Cal	....	May 6	.....	.12
Occidental Con., Nev	18	Apr. 23	June 15	.10
Ophir, Nev	65	May 7	May 27	.25
Overman, Nev	73	May 21	June 11	.10
Pine Hill, Cal	6	May 20	June 10	.05
Potosi, Mont	2	May 1	June 1	.00½
Red Jacket Con., Nev	5	May 17	June 8	.01½
Reward, Cal	....	May 16	.....	.10
Savage, Cal	86	May 22	June 11	.20
South Eureka, Cal	18	May 9	May 31	.01
Taylor, H. P., Cal	....	May 31	July 26	.04
Yellow Jacket, Nev	59	May 21	June 26	.25

STOCK QUOTATIONS.

NEW YORK MINING STOCKS.*

NAME OF COMPANY.	Location.	Par val.	Apr. 27. H.	Apr. 27. L.	Apr. 29. H.	Apr. 29. L.	Apr. 30. H.	Apr. 30. L.	May 1. H.	May 1. L.	May 2. H.	May 2. L.	May 3. H.	May 3. L.	Sales
Alice	Mont.	25	45												50
American Flag	Colo.	1									.05		.05		600
Arg. Juniata	"	2													
Belle Isle	"	100													
Best & Belcher	"	100													
Bodie Con	Cal.	100													
Brunswick	"	100	.18	.15	.18		.17		17	.15	.17	.16	.16		6,900
Castle Creek	Idaho	1											.03	.02	500
Chollar	Nev.	100							.49						100
Chrysolite	Colo.	50													
Colo. Coal & Ir.		100													
Comstock scrip	Nev.	100													
do. T. bonds	"	100			.14		.15		.15				.14		10,000
do T. stock	"	100	.10		.15	.10	.12	.10	11	.10			.11		17,500
Con. Cal. & Va.	"	100	3.20	3.1	3.00		3.25								2,000
Con. Imperial	"	50													
Crown Point	"	100													
Enterprise	Colo.	5													
Eureka Con.	Nev.	100											.35		100
Gould & Curry	"	100													
Hale & Norcross	"	100			1.50		1.60								200
Holyoke	Idaho	1											.02		100
Iron Silver	Colo.	100	.28												1,000
Isabella	"														
K. & Pembroke			.21				.20		.25						1,073
Lacrosse	Colo.	10			.10		.10						.10		900
Leadville Con	"	10	.17				.18	.17	.17		.17	.16	.16		3,100
Little Chief	"	50							.19						300
Mexican	Nev.	50													
Mollie Gibson	Colo.	5			1.05										800
Mono	Cal.	100													
Nevada Queen	Nev.	100													
Ophir	"	100					1.75								100
Oriental & Miller	"	100													
Phoenix of Ariz	Ariz.	100											.10		100
Plymouth	Cal.	100													
Portland	Colo.	50			.75	.70									1,200
Potosi	Nev.	100													
Quicksilver	Cal.	100													
do. pref.	"	100	14.70		19.00										120
Robinson Con.	Colo.	50													
Scorpion	Nev.	100													
Sierra Nevada	"	100													
Standard Con	Cal.	100	3.00												100
Union Con	Nev.	100									.46				50
Victor	Colo.	5													
Yellow Jacket	Nev.	100	.47						.40						400

* Official quotations N. Y. Stock and Con. Stock and Petroleum Exchanges. Total shares sold, 48,443.

BOSTON MINING STOCKS.*

NAME OF COMPANY.	Location.	Par val.	Apr. 26. H.	Apr. 26. L.	Apr. 27. H.	Apr. 27. L.	Apr. 29. H.	Apr. 29. L.	Apr. 30. H.	Apr. 30. L.	May 1. H.	May 1. L.	May 2. H.	May 2. L.	Sales
Allouez	Mich.	25													
Atlantic	"	25	10.88	10.50	11.00								11.75	11.00	360
Bonanza	"	10													
Bost & Mont	Mont.	21	41.38	41.00	42.25	41.75	42.25	41.00	42.5	42.13	42.38	42.00	42.75	42.50	6,006
Butte & Bost	"	25	13.38	12.75	13 50	13 25	13.50	13.25	14 00	13.50	13.63	13.38	13.88	13.50	10,294
Cal. & Hecla	Mich.	25	240						280				282		164
Catalpa	Colo.	10													
Centennial	Mich.	25													
Franklin	"	25	15.00	14.75	15.00		14.25		15.50	15.00			14.75		1,555
Kearsarge	"	25	10.00	9.50	9.88	9.75	9.50	9.38	9.75		9.75		9.88	9.75	1,500
Lake Superior	"	25													
Minnesota Iron	Minn.	25													
NapaQuicks'ver	Cal	2													
Osceola	Mich.	25	23.50	23.25	24.00				24.00		24.50	24 00	24.75	24.50	560
Pontiac	"	25													
Quincy	"	25	108	104	108	104					105		107	107	328
do. scrip	"		55.00	52.25					57 00						245
Tamarack	"	25	128	125	130		130	128			128		130	128	240
Tamarack, Jr.	"	25							14.50	14.00	14.25		14.75	14.50	344
Wolverine	"	25	4.50		4.61	4 05	4.50		5.00	4.09	4.75	4.09			2,085

* Official quotations Boston Stock Exchange. † Ex Dividend. Total shares sold, 23,811.

DENVER MINING STOCKS.* Week ending April 20.

NAME OF COMPANY.	Location.	Par value.	Opening	Highest.	Lowest.	Closing. Bid.	Closing. Ask.	Sales.
Amity	Leadville, Colo.		.03½	.01	.03½	.0 9½	.01	25,000
Anaconda	Cripple Creek, "	$5	.34½	.38	.34½	.34½	.38	2,000
Aola	" "	1	.006	.007	.006	.006	.007	3,000
Bangkok Cora Bell	Leadville, "	1	.22	.22	.18½	.18½	.19	64,000
Big Six	"		.10	.11¼	.11¼	.11¼	.11½	15,000
Boston-Idaho, pref	Caribou Dist., B. C.		23	.24	.23	.23	.24	4,000
Fannie Rawlings	Leadville, Colo.	1						
Forepaugh	"		.65	.75	.65	65	.75	6,000
Gold & Globe	Cripple Creek "	1	.05½	.08½	.05½	.07	.07½	45,000
Gold Standard	" "	1	.03¾	.03¾	.03¾	.03¾	.03½	26,000
Justice	Gilpin County, "	1	.03¼	.03½	.03¼	.03¼	.03½	27,000
Mollie Gibson	Aspen, "	5	1 20	1.20	1.03	1.04	1.04	1,000
Mt. Rosa	Cripple Creek, "	1	.05½	.07¾	.05½	.03½	.03½	7,000
Pharmacist	" " "	1	.05½	.06½	.05¼	.05¼	.05½	34,000
Work	" " "	1	.02½	.02¾	.02½	.02½	.02¾	23,000

* Official quotations Colorado Mining Stock Exchange. Total shares sold, 348,000.

COLORADO SPRINGS MINING STOCKS.*

NAME OF COMPANY.†	Par val	April 22. H.	April 22. L.	April 23. H.	April 23. L.	April 24. H.	April 24. L.	April 25. H.	April 25. L.	April 26. H.	April 26. L	April 27. H.	April 27. L.	Sales.
Alamo	$1	.01¾		.02	.01½	.02				.02½		.02½		27,500
Anaconda	5	.36	.35½	.36		.39	.36½	.40	.39	.38½		.39		12,500
Argent'm,J	2	1.10	1.03¾	1 06	1.05	1.07¼	1.07	1.07		1.05		1.01		5,550
Bob Lee	1	.006		.006	.0 55			.06	.0055					2,500
CrippleC C	1	.01½		.04½	.02¾	.02¾	.02½	.02¾		.02¾	.02¾	.03		4,000
C. O. D.	1													
Cr. & C. C.	1			.01¾		.01¾		.01¾						19,000
Fanny R.	1	.04		.04¾		.05	.04¾	.05	.04¾			.04¾		9,500
Franklin	1			.005										
Gold & Gl.	1	.03¾	.07	.06¾		.06¾	.06¾			.03¾	.03½			29,700
Isabella	1	.20	.19½			.21½	.21¼	.20¾	.19½	.20	.19¾	.19¾		40 150
Mollie G.	5	1.15	1 05¾	1.15¾	1.08	1.14	1.07¾	1.10	1.06¾	1.08¾	1.05	1.07		30,800
Mt. Rosa	1	.03¾		.03¾	0 3¾			.03¾						6,000
Pharmacist	1			.05¾						.05¾				4,150
Portland	1	.72	.70¾	.71¾	.70	.71¾	.71	.74¾	.71¼	.71¾	.69	.70¾	.69¾	24,650
Specimen	1													
Summit	1							.06¾		.06¾		.06¾		6,500
Union	1	.14¾		.14¾	.14¾	.14¾		14¾	.13½	.13¾	.12¾	.14	.13½	98,500
Work	1	.02¾								.02¾				26,000

* Official quotations Colo. Springs Mining Stock Association. Total shares sold, 338,060.
† All the companies are located in Colorado.

ASPEN MINING STOCKS.* April 19

NAME OF COMPANY.	Location.	Par value.	Bid.	Asked.	Shares sold.	Price.
Aita Argent	Aspen, Colo.	$1.00	$0.09	$ .10	11,000	$0.09
Argentum-Juniata	" "	2 00	1.00	1.01¾	7,000	1.01¾
Aspen Contact	" "	5.00		.25		
Aspen Deep Mining	" "	1.00	.08	.09	15,000	09
Best Friend	" "	1.00	.04	.04¼	3,000	.04
Bi-metallic	" "	1.00	.02	.02	3,450	02
Busnwhacker	" "	1.00	.06½	.07	28,000	.07
Caverhill Consolidated	" "	1.00	.1	.20	6,000	.20
Della S.	" "	5.00	.70	.72½	4,000	.70
Gold Valley Placer	Routt Co.,	1.00	.03½	.05	23,000	.04
Little Annie	Aspen, "	1.00	.02½	.0 3¾	73,000	.02¾
Mineral Farm Consolidated	" "	1.00	.11¾	12	6,000	.12
Mollie Gibson	" "	5.00	1.00	1.02¾	3,500	1.02½
Old Colony Gold	Taylor River, "	1.00	.75	.75	3,000	.75
Sheep Mt. T. & M	Crystal, "	1.00		.25		
Smuggler	Aspen, "	1.00	1.75	2.00	1,300	2.00
West Aspen Mountain	" "	1.00				

* Special report of Arkell, MacMillan & Stewart. Total shares sold, 188,250.

COAL AND COAL RAILROAD STOCKS.*

NAME OF COMPANY.	Par value.	April 27. H.	April 27. L.	April 29. H.	April 29. L.	April 30. H.	April 30. L.	May 1. H.	May 1. L.	May 2. H	May 2. L.	May 3. H.	May 3. L.	Sales
Am. Coal	25													
Balt. & Ohio	100			56½		56¾	55¼	55¾		57	56¾			2,285
Balt., R. & P.	100													20
do. pref.	100			60										
Ches. & Ohio	100	19¾	18¾	19¾		19	18¾	18¾	18¾			19	18¾	4,345
do. 1st pref.	100													
Col.C.& I.Dev	100							6¼						200
Col. Fuel & I.	100									25¾				100
do. pref.	100													
Col.,H.V.&Tol	100	26¾		26¾		26¾	26¼	26¾	26¾	27¾	26¾	27¾	27¼	5,418
do. pref.	100													
Col. & H. Coal	100			7¼	7									300
do. pref.	100													
Con. Coal	100													
Del. & Hud.C.	100	128	126¾	128¾	128	128¼	127¼	128½	127¾	130	129	130¾	129¾	17,309
Del., L. & W	150			149	149¾	150	150	150¼	149¾	150	149¾	150	149¾	3,405
Lake Erie & W	100	20¾	20¾	20¼	20	20¼	20	20¾	19¾	20¾	20¾	20½	20¼	4,553
do. pref.	100	77		77				77		77½	77	77½	77¼	1,421
‡LehighC.&N.	50	46½	45	46¼	45¼					46	45¼			59
‡Lehigh Val.	50	34	33¾	34	33¾			33¾	33¾	34½	33¾			1,401
Lehigh & W. B.	50													
Maryl'dC.pref	100													
Morris & Es'x	100				161			162½						140
N. J. Central	100	95	94	95¾	94¾	95¼	94¾	95¾	94½	96¼	95¼			19,056
N. Y., L. & W.	100													
N. Y., L.E.& W	100	12¼	12¾	12	11¾	11¾	11½	11¾		12		12¼	11¾	5,920
do. pref.	100													
N.Y.,Susq.& W	100	12¾		12¾	12¼	12¼		13	12¾	13¼	13	13¼	13¼	2,030
do. pref.	100	36½	36	36¾		36¾	35¾	36½		36¾	36	37¼	36¾	2,225
N. & West	50	3¾		4	3¾					3¾				900
do. pref.	50				16					16½				200
Penn. Coal	50													
‡Penn. R. R.	50	52¾	52¼	52¾				53¾	53¼					2,254
Phil. & Read.	50	16	15¾	16¾	15¾	16¼	16	16¾	15¾	17¾	16¾	17¾	17¼	44,727
Tenn. C. & I.	100	22¾	21¾	22¾	21¾	21¾	21¼	21¾	20¾	23	21¼	23¾	22¾	19,430
do. pref.	100							80						50
Wheel. & L. E	100	13½	13¼	13¼	12¾	13¾	12¾	13¼	12¾	13¾	13	13¼	13	13,240
do. pref.	100			43¾	43¼	43¾	43¾	43¾		44¼	44	43¾		300

* Official quotations N. Y. Stock Exchange. ‡ Phila. quotations. Total shares sold, 553,378.
§ Ex-Dividend.

INDUSTRIAL AND TRUST STOCKS.*

NAME OF COMPANY.	Par value.	April 27. H.	April 27. L.	April 29 H.	April 29 L.	April 30. H.	April 30. L.	May 1. H.	May 1. L.	May 2. H.	May 2. L.	May 3. H.	May 3. L.	Sales
Adam S' Exp	100							146	145					40
Am. Cot Oil.	100	26¾	27	27¼	27¼	27¾	27	27		29¼	27½	29¾	29¼	12,130
do. pref.	100			77¼		77		76		77¾	77	77¾	77½	1,352
Am Expr	100					113		112½						350
Am. Sug Rf.	100	109¾	109¾	110	108¾	109¾	108¾	112¾	108¾	113¾	111¾	114¼	112¾	301858
do. pref.	100	99	98¾	100	98¾	99¾	99¼	99¾	99¾	99¾	98¾	99¾	98¾	5,010
Edis.E.I.Co.	100				96¾			97		97¼				213
Gen.Electric	100	33¾	33¾	33¾	32¾	34½	33¾	34	33¼	34¾	33¾	34¼	33½	31,774
Nat.Lead Co	100	34¾	33¾	35¼	35	34	34½	34	34¾	34½	34¼	34½		
do. pref	100	89¼	88½	88¾	89	89	88¼	89¾	88¾	89	88¾	89¼	89¼	690
Nat.Lins.Oil.	100	24		23½								23¾		300
N.S.Cord.Co.	100	6¾	6	7¼	6¾	7¼	6¾	7¾	6¾	7¼	7	7¾	6¾	15,756
do. pref	100	11	10¾	11¾	10¾	11¾	9¾	10¾	10	11	10	10¾	10¼	11,044
do. gtd.	100	19	17¾	19½	19	18¾	17¾	19¼	18¾	18¾	17¾			5,092
U.S. Express	100	41¼				41¾	41¼	40¾	40¾					214
U. S. Rubber	100	41¾	40¾	41¾	40¾	41¼	40	40¾	40	42¾	41¼	42¼	41¾	19,342
do. pref	100	94¾	94	94	93½	94	93¾	94¼	93¾	95	94¾			4,791
Wells, Fa. Ex	100	105½	105¾			104¼				107¾				47
West. Union	100	89¼		89¾	89¼	89¾	88¾	89	88¾	89¾	89¼	89¾	89¼	15,931
†Westingh'se Air Brake	50			127										8

Official quotations N. Y. Stock Exchange. † Pittsburg quotations. Total shares sold, 430,6311.

MONTANA STOCKS.* HELENA, April 27.

NAME OF COMPANY.	Location	Company's office	Par value.	Bid.	Asked.	Shares sold.	Price	Date.
Am. Dev. & M. Co.	Sliv. Bow Co, Mont.	Butte, Mont.	$1	$3.50	$3.00	400	$2.75	Apr 16
Bald butte	L. & C'reCo., "	Helena "	1	3.50	4.00	200	3 60	" 18
Benton Group	Meagher Co. "	W.Sph. S.Mont.	5	.15	.25			
Bi-Metallic	Granite Co. "	St. Louis, Mo.	25	3.75	4.50			
Combination	" " "	Helena, Mont.	10	.75	.85	400	.75	Mar 10
Elkhorn	Jefferson Co. "	London, Eng.	£1	98. 6d.	108. 6d.	100	108.6d	Mar. 10
Granite Mt.	Granite Co., "	St. Louis, Mo.	$25	1.25	1.75			
Hope	" " "	" " "	10	1.25	1 50			
Hope	Jefferson Co. "	Helena, Mont.	5	3.50	5 00			
Hel'a & Frisco	Shoshone Co , Id.	" "	5	1.50	2.50			
Iron Mountain	Missoula Co., Mont.	" "	10	.60	.65	13,000	.60	Apr. 20
Ontario	DeerLodgeCo. "	" "	1	.95	1.00	500	1.00	Apr. 20
Poorman (Cœur d'Alene)	Shoshone Co., Id.	Butte "	10	.35	.50			
Royal Gold	D'r LodgeCo., Mont	D'r Lodge, "	5	.25	.85			

* Special Report of Samuel K. Davis. Total shares sold, 14,600.

San Francisco Stocks.*

NAME OF COMPANY	Location	Closing Quotations. Apr. 26.	Apr 27	Apr. 29	Apr 30	May 1.	May 2.
Alpha	Nev.						
Alta	"	.15	.15	.14	16	.16	
Belcher	"		.66	.65	.63	.66	
Belle Isle	"						
B. & Belch	"	.79	.80	.82	78	78	.75
Bodie	Cal.	1.05	1.10	1.05	1 05	1.05	1.05
Bulwer	"	.10	.10		.09	.11	.13
Challar	Nev.	.43	.45	.46	.44	.45	.41
Com'w'lth	"						
Con.C.&V.	"	2 95	3.05	3.15	3.10	2.95	2.95
Crown Pt.	"	59	.62	.62	.61	.60	
E'r'ka Con	"						.35
G'd & C'y	"	.46	.46	.47	.45	.46	.44
Hale & N.	"	1.30	1.35	1.50	1.35	1.40	1.40
Mexican	"	79	.81	.81	.80	.76	.75
Mono	Cal	.20	.19	15	.15	.17	.18
Ophir	Nev.	1.30	1.60	1.65	1 60	1 50	1.45
Potosi	"	.43	.45	.46	.46	.43	
Savage	"	.26	.29	.30	.29	.29	.27
Sierra Nev	"	.80	.81	.82	.78	.78	.77
UnionCon	"	.50	.50	.51	.5	.50	.47
Utah	"	.07	.08	.07	.06	.07	
Yel. Jack	"	.38	.38	.38	.38	.35	.35

* Par value of all shares quoted is $100.

Baltimore Stocks.* May 2.

Name of Company.	Location.	Par value.	Bid.	Ask.
Balt. & N. C.	N. C.	$5		$0.02
Balt. M. & S.	"			.02
Con. Hill	"	5		.02
Con. Coal	Md.	100	30.00	32.50
Con. G. & C	N. C.	5		.04
Ga. C. Coal	Md.	100	103.25	105.00
How. C. & C.	" "	5	1.10	1.20
Lake Chrome	" "	5		.10
Ore Knob	" "	10		.50
Silver Valley				20.00

*Official quotations Baltimore Exch'ge.

Duluth Stocks.* May 27.

Name of Company.	Par value	Price	Bid.	Asked
Adams Iron Co.	10		$3.00	$3.50
Biwabik I. M. Co.	100	19.50	20.00	21.00
Chandler Ir. Co.	25			27.00
Clev. Cliffs I. Co.	100		25.00	32.00
Gr't No. M. Co	100		1.75	2.00
Gr't West. M. Co.	100		1.00	1.50
Jackson Ir. Co.	25			60.00
L. Sup. Con. M.	100	12.00	12.50	13.00
L. Sup. (Marq'te)	25		17.00	20.00
Mes. C., L. & E. Co	10	5.00		4.00
Mes. Mt. Ir. Co.	100	16.50	16.00	17.00
Met. L. & I. Co.	25			60.00
Minnes'ta Ir. Co.	100	40.00	45.00	55.00
Mes. Chief I. Co.	100	2.25	2.50	3.00
Mountain Ir. Co.	100	42.00	45.00	50.00
Ohio Mining Co.	100	4 00	4.00	5.00
Pioneer Ir. Co.	25		.25	1.00
Pitts. & L. A. Co	100		55.00	62.00
Sec'tyL.& E.Co.	10		16.00	18 00

* Official quotations Duluth Exchange.

Pittsburg Stocks.* May 2.

Name of Company.	Par value	Last sale.	Bid.	Ask.
COAL STOCKS:				
N. Y. & Cl. G. C.	$50		$35	$55
GAS STOCKS:				
Allegheny	100	$18½	47	49
Chartiers Valley	100		8	9
Ohio Valley	50		31	35
People's Nat. Gas	50		34	40
People's Nat. Gas and Pipeage	25		13¾	13¾
Pennsylvania	50		6½	8¾
Philadelphia	50	18½	17¾	18¼
Wheeling	50	42½	42	45
MINING STOCKS:				
Lustre	10	15	13	15
OIL CO. STOCKS:				
Tuna			10	20
Washington	50		38	50

*Official quotations Pittsburg Exch'ge.

LONDON. Week ending April 20.

Name of Company.	Par value.	Quotations. Bid.	Asked.
AMERICANS:		£ s. d.	£ s. d.
Alaska-Mexican	£1	16 3	18 9
Alaska Treadwell	5	3 10 0	3 15 0
American Belle	1	2 3	2 9
De Lamar	1	1 9 6	1 10 0
Elkhorn	1	10 0	11 0
Harquahala	1	4 0	5 0
Holcomb Valley	5s.	3 0	3 3
Jay Hawk	£1	3 6	4 0
Montana	1	11 6	12 6
New Guston	1	10 0	12 6
Palmarejo (Mex.)	1	1 9	2 3
Plumas-Eureka	2	12 6	15 0
Poormac	5s.	1 9	2 3
Richmond	£5	8 9	11 3
Sierra Buttes	2	10 0	12 6
Springdale	4s.	3 9	4 0
SOUTH AMERICANS:			
Colombian Hydraulic	£1	10 6	11 6
Frontino & Bolivia	1	1 6 3	1 8 9
Tolima A shares	5	7 13 0	8 0 0
" B "	5	6 10 0	7 0 0
COPPER STOCKS:			
Cape Copper	2	1 12 6	1 15 0
" " preferred	2	1 18 9	2 1 3
Copiapo	2	1 12 6	1 15 0
COPPER STOCKS:			
Rio Tinto	£10	14 1 3	14 3 9
Tharsis	2	4 7 6	4 12 6
AUSTRALIANS:			
Bayley's Reward	1	9 0	10 0
Broken Hill Proprietary	8s.	2 0 0	2 1 0
Mt. Morgan Gold	17s. 6d	2 12 6	2 15 0
INDIANS:			
Champion Reef	£1	4 10 0	4 12 6
Mysore	1	2 18 9	3 1 3
Nundydroog	1	2 2 6	2 5 0
Ooregum		3 3 9	3 6 3
" preferred		4 2 6	4 5 0
SOUTH AFRICANS:			
British S. Africa Co	1	3 13 9	3 16 3
City & Suburban	1	27 10 0	27 15 0
Crown Reef	1	10 2 6	10 7 6
De BeersCon (diam'nd)	5	21 5 0	21 6 3
Durban-Roodepoort	1	7 12 6	7 15 0
Ferreira	1	16 15 0	17 5 0
Geldenhuis Estate	1	7 11 2	7 3 9
Jagersfontein (diam'd)	5	10 7 6	10 12 6
Langlaagte Estate	1	4 13 9	4 16 3
New Primrose	1	6 18 9	7 1 3
Robinson	5	8 17 6	9 0 0
Simmer & Jack	1	14 5 0	14 7 6

MEXICO. Week ending April 26.

Name of Company.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Closing.
Amistad y Concordia	Hidalgo	9,600	$4.53		$70	$70
Angustias	Guanajuato	2,400	15.00		1,050	1,040
Asturiana y Anexas	Zacatecas	2,500	10.00		425	430
Cerro Colorado	Chihuahua	15,000			28	30
Cinco Senores	Guanajuato	2,000	30.00		1,420	1,480
Concepcion y Anexas	S. Luis Potosi	2,700			250	260
El Oro	Guanajuato	500			120	120
do. pref	"	2,000	2.00		120	120
Huautla Sta. Ana	Morelos	4,000	1.50		100	100
Luz de Borda	Michoacan	3,000		0.50	70	40
do. Free stock	"	1,000			40	40
Luz de Maravillas	Hidalgo	1,100			400	350
Purisima de los Com.	Zacatecas	2,400			90	90
Real del Monte	Hidalgo	2,554	30.00		1,265	1,260
Rosario y Anexas	Durango	4,800			130	120
do. pref	"	2,400			80	80
Sta. Elena Almoloya	Hidalgo	1,280		0.10	10	10
Sta. Gertr. y Anexas	"	28 800	1.50		79	78
do. free stock	"	9,600	1.05		20	20
Sta. Maria de la Paz	S. Luis Potosi	2,400			280	260
Tlauzingo	Puebla	2,400			40	40
Zaragoza	Hidalgo	1,100			30	30
Zomelahuacan (gold)	Vera Cruz	5,000		1.50	100	100
Zona Min. de Pozos	Guanajuato	2,400		1.50	150	140

NOTE.—In most Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Prices are in Mexican dollars.

Philadelphia Stocks.* May 2.

Name of Company.	Par value	Bid.	Ask.
Bethlehem Iron Co			$80
Cambria Iron Co	$50		47
Penn. Nat. Gas	50		49½
Penn. Salt Co	50	95	97
Westmoreland Coal	50	52	50¾

* Official quotations Phila. Exchange.

Shanghai, China.* Mar. 29.

Name of Co.	Par.	Last div.	Price.
Jelebu Mg	$5	$0.25	T. 3·26
Punjom Mg	4		" 4·75
do. pref.	1		" 1·28
Raub A'lianG.	£1	10½d.	" 2·85
Sher.Con.(Col)	T. 100		" 1·00

* Special Report of J. P. Bissett & Co. Prices quoted are in silver taels.

PARIS. Week ending April 20.*

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Divs. last year.	Prices. Op'ning.	Closing.
			Francs.	Fr.	Fr	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	100.00	1,940.00	1,950.00
" " Firminy	"	"	5,000,000	500	85.00	1,400.00	1,600.00
" " Fives-Lille	"	"	12,000,000	500	35.00	625.00	640.00
" " la Marine	"	"	30,000,000	500	30.00	805.00	826.75	
" " Marine	"	"		500	35.00	697.50	690.00
" " l'Horme	"	"		500		19.00	20.00
Aguas Tenidas	Spain	Iron pyrites	10,000,000	500	40.00	425.00	445.00
Anzin	France	Coal			200.00	4,000.00	4,125.00
Boleo	Lower Cal.	Copper		500		760.00	766.00
Bruay	France	Coal	3,000,000	400	600.00	14,300.00	14,400.00
Callao	Venezuela	Gold	3,200,000	125		13.50	13.25
Cape Copper	S. Africa	Copper		50	1.50	38.00	42.50
Champ d'Or	"	Gold		25		115.00	117.50
Courrieres	France	Coal	6,000,000	300	150.00	4,225.00	4,140.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.60	542.50	556.87
Dombrowa	Russia	Coal		500		565.00	550.00
Dourges	France			1,000	225.00	6,250.00	6,950.00
Dynamite Centrale	"	Explosives		500	25.00	650.00	650.00
Dynamite Francaise	"	"		500	25.00	705.00	705.00
Epinac	"	Coal		2,500		600.00	600.00
Huanchaca	Bolivia	Silver		125	5.00	160.00	180.00
Jerez-Las Teiras	Spain	Copper				6.90	6.75
Kebao	Tonquin	Coal		500		642.00	630.00
Laurium	Greece	Zinc & lead	16,300,000	500	40.00	575.00	580.00
Malfidano	Italy	Zinc	12,500,000	500	52.50	995.00	975.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,000	500	47.50	222.50	260.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	785.00	790.00
Nickel	N. Caledonia	Nickel	12,720,000	500	30.00	253.00	250.00
Penarroya	Spain	Coal, etc.		500	52.50	785.00	735.00
Pontgibaud	France	Lead, etc.				275.00	276.00
Rio Tinto	Spain	Copper	81,250,000	250	8.00	332.50	348.00
Robinson	S. Africa	Gold		125	12.5	227.00	225.00
Saint Elie	Fr. Guiana	"	4,000,000	25		35.00	34.00
Salines de l'Est	France	Salt		500	27.00	375.00	380.00
Soufres Roumaines	Italy	Sulphur				195.00	195.00
Tharsis	Spain	Copper		50	6.2	112.00	118.75
Vicogne-Noeux	France	Coal				500.00	17,300.00	17,000.00
Vielle Montagne	Belgium	Zinc	9,000,000	80	30.00	471.25	470.00

VALPARAISO, CHILE.* March 9.

Name of Company.	Capital.	Share value. N'minal.	Paid up.	Last dividend.	Prices. Bid.	Asked.	Lost sale
Arturo Prat	$3,300,000	$100	$100	0½ per cent.	$37		$35½
Caracoles	315,000	100	100	5 "			50
Descub. de Huantajaya	1,000,000	100	100	2 "	43	45	55
Oruro	800,000	1,000	1,000		2,800	3,000	2,900
S. Agustin de Huantajaya	1,500,000	100	100	2½ per cent.	98	100	98
Todos Santos	2,000,000	100	100	0½ "	17¾	18	18
Nitrate Cos:							
Agua Santa	5,000,000	500	500	6 "	160	170	170
Antofogasta	2,000,000	200	200	10 "	215	220	215
Union	3,000,000	200	100	3 "	85	87½	87

* Special Report of Jackson Bros. Values are in Chilean pesos or dollars.

SALT LAKE CITY STOCKS.* April 27.

Name of Company.	Par value	Bid.	Asked.	Actual selling price.	Name of Company.	Par value	Bid.	Asked.	Actual selling price.
Ajax			$ .50		Eureka Hill			$125.00	
Alliance	$1	$1.00	1.20	$1.10	Horn Silver	$5	$2.75	2.75	$2.65
Amer. Nat. Gas		.15	.30	.25	Lucky Bill			.40	
Anchor	20	3.20	3.50	3.45	Mammoth	25	1.00	1.20	1.10
Apex			.10		Morgan	25	.70	.90	.85
Bowan	1	.30	.50	.45	Mercur	25	3.75	4.25	3.90
Bullion Beck	10	7.50	8.50	8.25	New Tintic			3.00	
Cane Springs		.50	.85	.75	Niagara			2.50	
Centen'l Eureka	10	42.00			North Eureka			.10	.10
Cleveland Con	1		.50	.50	Northern Spy			2.50	
Comstock	25	.15	.25	.25	Ontario	100	10.50	12.00	11.50
Crescent			.03		Silver King	20	13.50	14.50	14.25
Dalton	5	.00½	.01½	.01	Tetro	1		.25	.25
Daly	20	6.50	7.25	7.00	Utah	1	.50	1.00	.75
Daly West	20	6.50	7.00	7.00	Utah Lime	10	3.50	4.25	4.00
Elko			.25	.25					

* Special Report of James A. Pollock.

CURRENT PRICES.

These quotations are for wholesale lots in New York unless otherwise specified.

Acid—Acetic, chem. pure .18@.20
Commercial, in bbls. and cbys. .01¾@.02
Carbonic, liquefied, ℔ lb. .07@.10
Chromic .20
Hydrofluoric .04@.07
Alcohol—95%, ℔ gall. $2.30@$2.40
Absolute $3.80
Alum—Lump, ℔ cwt. $1.60@$1.80
Ground, ℔ cwt. $1.70@$1.90
Lump ℔ ton, Liverpool £1 10s.@£4 17s.
Aluminum Chloride—Pure, ℔ lb. $1.25
Amalgamating solution, ℔ lb. .60
Sulphate, ℔ cwt $1.25@$1.75
Ammonia—Sal., lump, ℔ lb. .09@.10
Carbonate, ℔ lb., English and German .08½@.09½
Muriate, white, in bbls., ℔ lb. .07@.08
Aqua Ammonia—(in cbys) 18° ℔ lb. .03@.04
20°, ℔ lb. .04@.05
26°, ℔ lb. .04½@.05
Antimony—Oxymur, ℔ lb. .04@.06
Regulus, ℔ lb. .07@.08
Oxide .18@.25
Argols—Red, powdered, ℔ lb. .15
Arsenic—White, powdered ℔ lb. .03@.03¾
Red ℔ lb. .06½@.06
Yellow .08@.09
White at Plymouth, ℔ ton £12 2 6
Asbestos—Canadian, ℔ ton $15@$120
Italian, ℔ ton, c. i. f. L'pool £18@£60
Ashes—Pot, 1st sorts, ℔ lb. .04¾@.04¾
Pearl .00½@.00
Asphaltum—
Prime Cuban, ℔ lb. .04@.05
Hard Cuban, ℔ ton $25.00@$30.00
Trinidad, refined, ℔ ton $30.00@$35.00
Egyptian and Syrian, ℔ lb. .05@.07½
Californian, at mine, ℔ ton $12.00@$26.00
at San Francisco, ℔ ton $15.00@$29.00
Barium—Carbonate, pure precip., ℔ lb. .10
Carbonate, commercial, ℔ lb. .03
Chlorate, crystal, ℔ lb. .20@.30
Chloride, commercial, ℔ lb. .02@.02½
Iodide, ℔ oz. .40
Nitrate, ℔ lb. .06½@.07
Sulph., Am. prime white, ℔ ton $15@$18
Sulph., foreign, floated, ℔ ton $16@$18
Sulph., off color, ℔ ton $10@$11.50
Carb., lump, f. o. b. L'pool, ℔ ton £6
Bauxite—℔ ton $7 @ $8
Bichromate of Potash—Scotch ℔ lb. .09 @ 0
American, ℔ lb. .09 @ 09½
Bichromate of Soda—℔ lb. .08 @ .08
Borax—Refined, ℔ lb., in car lots .06 @ 06½
Bromine—℔ lb. .25 @ .35
Cadmium Minion—℔ lb. $2.00
Cadmium Iodide—℔ lb. $5.00
Chalk—℔ ton $1.50@$2.25
Precipitated, ℔ lb. .04@.05
China Clay—English, ℔ ton $12@$17.00
Domestic, ℔ ton $6@$11
Chlorine, liquefied, ℔ lb. .25
Chrome Yellow—℔ lb. .10@.25
Chrome Iron Ore—℔ ton, San Francisco $10.00
Chromalum—Commercial, ℔ lb. .03@.05
Cobalt—Oxide, ℔ lb. $1.40@$1.55
Copper—Sulph. English Wks. ton £20@£21
Vitriol (blue), ℔ lb. .03¾@.04¼
Nitrate, ℔ lb. .25
Copperas—Common, ℔ 100 lbs .50@.65
Best, ℔ 100 lbs. $1.25@$1.50
Liverpool, ℔ ton, in c'sks. £1 11s.@£1 15s.
Corundum—Powdered, ℔ lb. .04¼@.09
Flour, ℔ lb. .03
Cryolite—Pow., ℔ lb., bbl. lots .06½@.07½
Emery—Grain, ℔ lb. (50 kg.) .04½@.05
Flour, ℔ lb. .02½@.04
Epsom Salt—℔ lb. .01@.01½
Feldspar—Ground, ℔ ton $6.00@$10.00
Fluorspar—Powdrd, No. 1, ℔ ton $15@$20
Lump, at mine $6@$8
French Chalk—℔ ton $2.25@$2.30
Fuller's Earth—Lump, ℔ ton $10@$20
Glauber's Salt—in bbls., ℔ cwt .50@.75
Glass—Ground, ℔ lb .09@.10
Gold—Chloride, pure, crystals, ℔ oz. $12.00
pure, 15 gr., c. v., ℔ doz. $5.40
liquid, 15 gr., s. a. v., ℔ doz. $5.50
Chloride and sodium, ℔ oz $6.00
15 gr., c.v., ℔ doz. $2.75
Oxide, ℔ oz. $27.25
Gypsum—Calcined, ℔ bbl $1.75
Iodine—Resublimed, ℔ lb. $5.50@$5.60
Iridium—Oxide ℔ lb. $90
Iron—Nitrate, 40°, ℔ lb .01@.01½
47°, ℔ lb. .02@.02½

Kaolin—*See China Clay.*

Kieserite—℔ ton $9@$10
Lead—Red, American, ℔ lb .04¼@.05
White, American, in oil, ℔ lb. .05½@.06
White, English, ℔ lb., in oil .06½@.07½
Acetate, or sugar of, white .06@.08
Nitrate .05¾@.06½
Lime Acetate—Am. Brown .00@.00
" Gray $1.50@$1.60
Litharge—Powdered, ℔ lb. .04½@.05
English flake, ℔ lb. .07½@.09½
Magnesite—Crude, ℔ ton of 1,016 kilos $7@$10
Calcined, ℔ ton of 1,240 lbs. $12@$14
Brick, ℔ ton of 2,240 lbs. $47.50
Manganese—Ore, per unit .23@.28
Oxide, ground, ℔ lb .02½@.06½
Mercuric Chloride—(*Corrosive Sublimate*) .55@.60
Marble Dust—℔ bbl. .85c.@$1
Metallic Paint—Brown ℔ ton $20@$25
Red $20@$25
Mica—In sheets according to size, 1st quality, ℔ lb. $3.25@$6
Mineral Wool—Ordinary slag .01½
Ordinary rock .02½
Nitre Cake—℔ ton $2.50@$3
Ochre—Rochelle, ℔ lb. .01@.01½
Washed Nat Oxf'rd, Lump, ℔ lb. .01¼@.01½
Washed Nat Oxf'rd, Pow., ℔ lb. .01¾@.02¼
Golden, ℔ lb. .03@.06
Domestic, ℔ ton $8@$10
Oils, Mineral—
Cylinder, light filtered, ℔ gal. .12@.20
Dark filtered, ℔ gal. .10@.15
Extra cold test, ℔ gal. .20@.24
Dark steam refined, ℔ gal. .07½@.12
Phosphorus—℔ lb. .50@.55
Precip., red, ℔ lb. .75@.80
white, ℔ lb. .80@.85
Platinic Chloride—Dry, ℔ oz. $6
Plumbago—Ceylon, ℔ lb. .04@.05
American or German, ℔ lb. .02@.02½
Potassium—Cyanide, ℔ lb., C. P. 52 .52
67%, ℔ lb. .40
mining .20@.22
Bromide, domestic, ℔ lb. .28@.32
Chlorate, English, ℔ lb. .10@.12
Chlorate, powdered, English, ℔ lb. .12@.14
Carbonate, ℔ lb., by casks, 98–99% .06@.07
Caustic, ℔ lb., pure slick .04½@.06
Iodide, ℔ lb. $2.58@$2.80
Nitrate, refined, ℔ lb. .05@.06
Bichromate, ℔ lb. .09@.11
Yellow Prussiate, ℔ lb., 24c. contr., 25c. single casks. .39@.45
Red Prussiate, ℔ lb. .03¼@.15
Pumice Stone—Select lumps, ℔ lb. .01½@.02
Original cks., ℔ lb. .01¼@.02
Powdered, pure, ℔ lb. .01¼@.02
Pyrites—Non-cupreous, p. unit. .10@.11
Quartz—Ground, ℔ ton $6.00@$10.00
Rotten Stone, Powdered, ℔ lb. .03¼@.03¾
Lump, ℔ lb. .06@.07
Original cks, ℔ lb. .04½@.05½
Rubbing stone, ℔ lb .03½@.04
Salt—Liverpool, ground, ℔ sack .70
Domestic, fine, ℔ ton $7@$7.50
Common, fine, ℔ ton $4.50@$5
Turk's Island, ℔ bush .26@.28
Salt Cake—℔ ton $9@$15
Saltpeter—Crude, ℔ lb. .04@.05
Soapstone—Ground, ℔ ton $6@$8
Block and slab according to size
Sodium—Prussiate, ℔ lb. .22@.24
Phosphate, ℔ lb. .04@.05
Stannate, ℔ lb. .06@.12
Tungstate, ℔ lb. .30@.35
Hyposulphite, ℔ cwt., in casks $1.70@$1.80
Strontium—Nitrate, ℔ lb. .08@.09
Sulphur—Roll, ℔ lb. .01½@.02
Flour, ℔ lb. .01¼@.01¾
Sylvinit, 27@35%, per unit .36½@.37½
Talc—Ground French, ℔ lb. .01¼@.01½
American No. 1, ℔ lb. .01@.01½
American No. 2 .006@.008
Terra Alba—French, ℔ cwt .50@.80
English .70@.80
Domestic, ℔ ton $8.50@$10
Tin—Crystals, in kegs or bbls. .14@.15
feathered or flossed. .30
Muriate, single .07@.12
Double or strong, 54° B. .10@.15
Oxymur, or nitro .19
Vermilion—Imp. English, ℔ lb. .64@.66
Am. quicksilver, bulk .59@.62
Am. quicksilver, bags .60@.64
Chinese .85@$1.00
Trieste .90@.96
American .11¼@.12
Zinc White—Am., Dry, ℔ lb. .03¼@.04¼
Antwerp, Red Seal, ℔ lb. .05½@.05¾
Paris, Red Seal, ℔ lb. .06¾@.07
Muriate solution .06
Sulphate crystals in bbls., ℔ lb. .03@.03

THE RARER METALS.

The prices given below are the prices in Germany, and are per gramme except where otherwise stated:

Arsenic (metallic), per kilo $0.25
Barium (ex amalgam) 2.12
" (per electrol.) 7.75
Bismuth (metallic), per kilo 6.25
Cadmium (metallic), " 2.75
Calcium (per electrol.) 5.25
Cerium (pulv.) 2.25
" (fusum in globulis) 5.50
Chromium (fus.) .40
" (cryst.) .75
Cobalt (metallic), per kilo 10.00
" (pure), per kilo 10.00
Didymium (pulv.) 5.50
Erbium-Yttrium (oxydat.) 10.00
Gallium (cryst.) 100.00
Germanium (fus.) 37.50
(pulv.) 35.00
Glucinum (pulv.) 7.00
" (cryst) 10.75
Indium 5.00
Iridium (fusum) 1.25
Lanthanum (pulv.) 6.00
" (per electrol.) 11.00
Lithium (in glob.) 5.00
" (wire) 6.25
Manganese (fusum) .25
Molybdenum (pulv.) .12½
Niobium (pulv.) 4.25
Osmium 1.00
Palladium (wire) .06
" (pulv.) 1.00
Potassium (metal), per kilo 27.50
Rhodium 1.63
Ruthenium 2.50
Rubidium 6.25
Selenium (cryst.) .50
" (precipitates) .02½
Strontium (per electrol.) 7.25
" (ex amalgam) 3.25
Tantalum 4.75
Tellurium (fusum) .50
" (precipitates) .22½
Thallium .03¾
Titanium 1.13
Tungsten (pure) .05
Uranium 1.00
Vanadium 1.00

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par val.	Assessments. Total Levied	Assessments. Date and amount of last.			Dividends. Total paid.	Dividends. Date & amount of last.		
1	Adams, s. L.	Colo.	$1,500,000	150,000	$10	*	.....	.....	.....	$687,500	Jan..	892	05
2	Alaska-Treadwell, g.	Al'ska	5,000,000	200,000	25	*	.....	.....	.....	2,224,000	Apr..	1895	.37½
3	Alice, s.	Mont.	10,000,000	400,000	25	*	.....	.....	.....	975,000	Nov..	1891	.06¼
4	Amador, G.	Cal.	1,250,000	250,000	5	*	.....	.....	.....	31,250	Aug..	1890	.12½
5	American, G.	Colo..	3,000,000	300,000	10	*	.....	.....	.....	225,000	Mar..	1892	.05
6	American Belle, s. & c.	Colo.	2,000,000	400,000	5	*	.....	.....	.....	50,000	Apr..	1891	.12½
7	Americ'n & Nettie, G. & s.	Colo.	.....	300,000	.....	.....	.....	.....	.....	175,000	Mar..	1892	.05
8	Atlantic, C.	Mich.	1,000,000	40,000	25	280,000	April	1875	$1.00	700,000	Feb..	1891	1.00
9	Argyle, G.	Colo..	1,000,000	1,000,000	1	*	.....	.....	.....	20,000	Mar.	1892	.01
10	Aspen Mg. & S., s. L.	Colo..	2,000,000	200,000	10	*	.....	.....	.....	900,000	July.	1894	.10
11	Aurora, I.	Mich..	2,500,000	100,000	25	.....	.....	.....	.....	650,000	Feb..	1893	2.00
12	Badger, s.	Ont.	250,000	50,000	5	*	.....	.....	.....	37,500	Mar.	1890	.25
13	Bald Butte	Mont	250,000	250,000	1	*	.....	.....	.....	382,000	Jan.	1895	.05
14	Bangkok-C. Bell, s. L.	Colo..	600,000	600,000	1	.....	.....	.....	.....	77,510	Apr..	1895	.02
15	Bates Hunter, s. g.	Colo.	1,000,000	1,000,000	1	*	.....	.....	.....	67,500	Dec..	1891	.00¾
16	Belden, F. E., m.	N. H.	500,000	100,000	5	*	.....	.....	.....	135,113	Mar..	1895	.01
17	Belle Isle, s.	Nev..	10,000,000	100,000	100	230,271	Sept	1893	.10	300,000	Dec..	1879	.25
18	Belcher, s. G.	Nev..	10,400,000	104,000	100	3,262,900	Nov.	1892	.20	15,397,200	Apr..	1876	1.00
19	Bellevue, Idaho, s. L.	Idaho	1,250,000	125,000	10	130,000	Dec..	1889	.25	200,000	Jan..	1890	.10
20	Best Friend	Colo.	1,000,000	1,000,000	1	*	.....	.....	.....	90,000	Feb..	1892	.01
21	Bi-Metallic, s. G.	Mont.	5,000,000	200,000	25	.....	.....	.....	.....	1,630,000	June	1893	.10
22	Bodie Con., G. L.	Cal..	2,500,000	250,000	10	*	.....	.....	.....	1,677,572	Dec..	1894	.25
23	Boston & Mont., G.	Mont.	3,750,000	150,000	25	*	.....	.....	.....	520,000	June	1886	.15
24	Boston & Mont., C. & S.	Mont.	2,000,000	80,000	25	*	.....	.....	.....	2,325,000	Nov..	1894	1.00
25	Brotherton, L.	Mich	10,000,000	100,000	10	155,000	July	1893	.15	120,000	Mar..	1893	.50
26	Bulwer, G.	Cal..	3,000,000	300,000	10	*	.....	.....	.....	190,000	Oct..	1892	.05½
27	Bunker Hill & S. s. L.	Idaho	3,000,000	300,000	10	505,000	May.	1885	.15	150,000	Oct..	1888	.06
28	Caledonia, G.	Dak..	1,000,000	100,000	10	.....	.....	.....	.....	192,000	Oct..	1890	06½
29	Calumet & Hecla C.,	Mich..	2,500,000	100,000	25	1,200,000	.....	.....	.....	41,350,000	Dec..	1894	5.00
30	Centen'l-Eureka, s. L.	Utah.	1,500,000	30,000	50	30,000	Mar.	1888	1.00	1,980,000	Apr..	1895	.50
31	Central, C.	Mich..	500,000	20,000	25	100,000	Oct..	1861	.65	1,970,000	Feb..	1891	1.00
32	Champion, G	Cali..	340,000	34,000	10	150,000	.....	.....	.....	198,630	Feb..	1895	.10
33	Chrysolite, s. L.	Colo..	10,000,000	200,000	50	*	.....	.....	.....	1,650,000	Dec..	1884	.25
34	Cœur D'Alene, s. L.	Idaho	5,000,000	500,000	10	.....	.....	.....	.....	340,000	June	1893	.06
35	Colorado Central, s. L.	Colo..	2,750,000	275,000	10	*	.....	.....	.....	502,661	Apr..	1893	.05
36	Commonwealth, s.	Nev..	10,000,000	100,000	100	200,000	Nov.	1893	.10	30,000	Nov..	1891	.20
37	Confidence, s. L.	Nev..	2,496,000	24,960	100	589,550	Aug..	1892	.50	277,688	Apr..	1889	1.00
38	Cons. Cal. & Va., s. G	Nev..	21,600,000	216,000	100	216,000	Dec..	1892	.50	3,954,830	Mar	1895	.25
39	Contention, s.	Ariz..	12,500,000	250,000	50	.....	.....	.....	.....	2,634,500	Aug.	1892	.20
40	Cook's Peak, s.	N. M..	2,000,000	200,000	10	.....	.....	.....	.....	119,532	Nov	1892	.05
41	Cop. Queen Con., C.	Ariz..	2,000,000	200,000	10	.....	.....	.....	.....	1,810,000	Feb..	1895	.25
42	Coptis	Nev.	10,000,000	100,000	100	*	.....	.....	.....	68,000	Feb..	1895	.01
43	Cortes, s.	Nev.	1,500,000	300,000	5	*	.....	.....	.....	735,000	Feb..	1893	.15
44	Crescent, s. L. G.	Utah	15,000,000	600,000	25	60,000	Oct	992	.10	288,000	Oct..	1888	.03
45	Crown Point, G. s.	Nev..	10,000,000	100,000	100	2,750,000	June	1893	.25	11,898,000	Jan..	1875	.00
46	Daly, s. L	Utah.	3,000,000	150,000	20	.....	.....	.....	.....	2,850,000	May..	1893	.25
47	Deadwood-Terra, G.	Dak..	5,000,000	200,000	25	*	.....	.....	.....	1,140,000	Sept..	1892	05
48	DeLamar, G. s.	Idaho	2,000,000	400,000	5	.....	.....	.....	.....	1,372,000	Jan ..	1895	.25
49	Derbec B. Grav., G.	Cal..	10,000,000	100,000	100	100,000	Sept.	1892	.10	260,000	Mar..	1891	.05
50	Dexter, G. s	Nev..	1,000,000	100,000	10	.....	.....	.....	.....	24,000	July	1893	.25
51	Dishorn, s.	Mont.	1,000,000	200,000	5	*	.....	.....	.....	1,299,689	Dec.	1894	18
52	Elkton	Colo..	50,000	500,000	1	.....	.....	.....	.....	60,000	Dec.	1894	.01
53	Enterprise, s.	Colo..	2,500,000	500,000	5	*	.....	.....	.....	850,000	June.	1893	.25
54	Eureka Con., s. L. G.	Nev..	1,000,000	50,000	20	550,000	June	1889	.50	5,112,500	Jan.	1892	.25
55	Evening Star, s. L.	Colo..	500,000	50,000	10	900,000	Nov..	1878	.60	1,437,500	Dec.	1889	.25
56	Father de Smet, G.	Dak..	10,000,000	100,000	100	330,000	June	1167	2.50	1,125,000	Dec..	1885	.20
57	Franklin, C.	Mich..	1,000,000	40,000	25	.....	.....	.....	.....	1,240,000	Jan.	1894	2.00
58	Glengarry	Mont.	1,000,000	100,000	10	.....	.....	.....	.....	10,000	June.	1891	10
59	Gold & Globe, G.	Colo..	750,000	750,000	1	.....	.....	.....	.....	7,500	Mar..	1895	00¼
60	Gould & Curry, s. G.	Nev..	10,800,000	108,000	100	4,688,400	Oct	1893	.10	3,826,800	Oct.	1870	10.00
61	Grand Prize, s.	Nev..	10,000,000	100,000	100	785,000	Jan..	1890	.30	495,000	Mar.	1884	.25
62	Granite Mountain, s.	Mont.	10,000,000	400,000	25	.....	.....	.....	.....	12,120,000	July.	1892	.20
63	Great Western, L. G.	Cal..	5,000,000	50,000	100	50,526	.....	1889	.15	988,366	Nov.	1893	.25
64	Hale & Norcross, G. s.	Nev..	11,200,000	112,000	100	5,646,800	June	1893	.50	1,822,000	Aug.	1888	.50
65	Hecla Con., s. G. L. C.	Mont.	1,500,000	30,000	50	*	.....	.....	.....	2,055,000	Mar..	1895	.50
66	Hel'a Mg. & Red. s. L. G.	Mont.	3,315,000	663,000	5	*	.....	.....	.....	194,970	July.	1886	.06
67	Helena & Frisco, s. L.	Idaho	2,500,000	500,000	5	.....	.....	.....	.....	240,000	Feb.	892	.02
68	Helena & Victor	Mont.	1,000,000	200,000	5	.....	.....	.....	.....	80,000	May.	1892	.05
69	Holmes, s.	Nev..	10,000,000	100,000	100	345,000	Mar	1890	.25	75,000	Apr	1892	.25
70	Homestake, G.	Dak..	12,500,000	125,000	100	200,000	July.	1878	1.00	5,529,000	Apr.	1895	.25
71	Hope, s.	Nev..	1,000,000	100,000	10	*	.....	.....	.....	693,250	Jan	1895	.10
72	Horn-Silver, s. L.	Utah	10,000,000	400,000	25	*	.....	.....	.....	5,137,500	Apr..	1895	.12½
73	Idaho, G.	Cal..	310,000	3,100	100	.....	.....	.....	.....	5,489,000	Sept.	1893	2.50
74	Illinois, s.	N. M..	100,000	100,000	1	*	.....	.....	.....	45,000	Apr..	1889	.20
75	Iron Mountain, s.	Mont.	5,000,000	500,000	10	*	.....	.....	.....	305,000	Jan..	1895	.02
76	Iron-Silver, s. L.	Colo.	10,000,000	500,000	20	*	.....	.....	.....	2,500,000	Apr..	1889	.20
77	Jackson, G. s.	Nev..	5,000,000	50,000	100	247,500	Mar..	1893	.20	83,000	Feb	1895	.04
78	Kearsarge, C.	Mich..	1,000,000	40,000	25	190,000	Oct..	1887	1.00	80,000	Jan.	1890	2.00
79	Kennedy	Cal..	10,000,000	100,000	100	*	.....	.....	.....	1,503,000	Feb..	1895	.48
80	Leadville Con., s. L.	Colo.	4,000,000	400,000	10	*	.....	.....	.....	516,008	Feb..	1893	.03
81	Lexington, G. s.	Mont.	4,000,000	40,000	100	*	.....	.....	.....	652,200	July.	1893	.90
82	Little Chief, s. L.	Colo.	10,000,000	200,000	50	*	.....	.....	.....	820,000	Dec.	1890	.05
83	Maid of Erin	Colo.	3,000,000	600,000	5	.....	.....	.....	.....	708,500	Apr..	1895	.25
84	Mammoth, s. L. G.	Utah	10,000,000	400,000	250	110,000	.....	1882	.25	1,040,000	Apr..	1892	.03
85	Maxfield	Utah.	3,000,000	300,000	10	.....	.....	.....	.....	117,000	Apr..	1895	.10
86	Mayflower, D. gravel	Cal..	1,200,000	60,000	20	.....	.....	.....	.....	224,000	Mar..	1895	.10
87	Minas Prietas, G. & s.	Mex..	1,000,000	100,000	10	.....	.....	.....	.....	390,000	Dec..	1890	.50
88	Minnesota, C.	Mich..	1,000,000	40,000	25	420,000	April	1886	1.00	1,820,000	Mar..	1876	.....
89	Minnesota Iron, I.	Minn.	16,500,000	165,000	100	.....	.....	.....	.....	2,745,000	Apr..	1893	1.50
90	Mollie Gibson, s.	Colo..	5,000,000	1,000,000	5	19,500	Jan..	1891	.01	4,080,000	Jan..	1895	.05
91	Monitor, G.	S. Dak	2,500,000	250,000	10	.....	.....	.....	.....	45,000	Oct	1890	.18
92	Mono, G.	Cal..	5,000,000	50,000	100	797,500	Feb..	1893	.25	12,500	ar	1886	.25
93	Montana, Lt., G. & s.	Mont.	3,300,000	660,000	5	*	.....	.....	.....	2,701,775	Jan.	1895	12½
94	Moose	Colo..	600,000	600,000	1	.....	.....	.....	.....	72,000	Nov..	1894	.02
95	Morning Star, s. L.	Colo..	1,000,000	100,000	10	.....	.....	.....	.....	1,025,000	Dec..	1891	.25
96	Morning Star Drift, G	Cal..	240,000	2,400	100	*	.....	.....	.....	328,200	Mar..	1895	.00
97	Moulton, s. G.	Mont.	2,000,000	400,000	5	*	.....	.....	.....	430,000	Feb.	1893	.15
98	Mt. Diablo, s.	Nev..	5,000,000	50,000	100	137,500	June	1880	2.00	225,000	Nov	1893	30
99	Mt. Rosa, G	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	10,000	Jan..	1895	10
100	Napa, Q.	Cal..	700,000	700,000	7	*	.....	.....	.....	630,000	Apr.	1892	.20
101	Navajo, G. s.	Nev..	10,000,000	100,000	100	538,714	Sept.	1893	.10	226,111	Apr..	1889	.10
102	New Guston, s.	Colo..	550,000	110,000	5	*	.....	.....	.....	1,877,500	Apr..	1892	.75
103	North Banner Con.	Cal..	1,000,000	100,000	10	.....	.....	.....	.....	20,000	July..	1891	.05
104	North Commonw'th	Nev..	10,000,000	100,000	10	90,000	Jan..	1893	.10	25,000	June.	1891	.25
105	N. Hoover Hill, G. & s.	N. C.	300,000	120,000	2½	*	.....	.....	.....	30,000	Dec..	1885	.06¼
106	North Belle Isle, s.	Nev.	10,000,000	100,000	100	513,675	April	1893	.10	230,000	May.	1888	.50
107	North Star, G.	Cal..	1,000,000	100,000	10	20,000	.....	1885	.02	450,000	June	1893	.50
108	Nugget, G.		1,000,000	1,000,000	1	*	.....	.....	.....	10,000	Jan..	1895	.00½
109	Omaha Cons., G.	Cal...	2,400,000	24,000	100	.....	.....	.....	.....	97,200	July..	1894	.15
110	Ontario, s. L.	Utah	15,000,000	150,000	100	.....	.....	.....	.....	13,175,000	Oct..	1892	.50
111	Ophir, G. s.	Nev..	10,000,000	100,000	100	4,391,040	July	1893	.25	1,595,800	Jan	1891	1.00
112	Osceola, C.	Mich..	1,250,000	50,000	25	480,000	April	1876	1.60	1,897,500	Jan..	1895	1.00
113	Pacific Coast, B.	Cal...	2,000,000	20,000	100	.....	.....	.....	.....	422,500	July	1893	1.00
114	Parrot, C.	Mont.	2,130,000	213,000	10	.....	.....	.....	.....	1,569,000	June	1893	.10
115	Petro	Utah.	10,000,000	40,025	100	.....	.....	.....	.....	17,500	July..	1891	.75
116	Pharmacist, G.	Colo..	1,406,200	140,600	50	.....	.....	.....	.....	2,696,295	Oct..	1893	.18
117	Plumas Eureka, G.	Cal..	1,200,000	1,200,000	1	.....	.....	.....	.....	80,000	June.	1893	01
118	Plymouth Con., G.	Cal..	5,000,000	100,000	50	*	.....	.....	.....	2,280,000	Feb.	1888	.40
119	Poorman; G. s.	Idaho	375,000	300,000	125	*	.....	.....	.....	68,250	Sept.	1892	.15
120	Portland, G.	Colo..	3,000,000	3,000,000	1	*	.....	.....	.....	135,000	Mar..	1895	.01
121	Quicksilver, pref., Q.	Cal...	4,300,000	43,000	100	.....	.....	.....	.....	1,823,911	June	1891	1.25
122	" com., Q	Cal..	5,700,000	57,000	100	.....	.....	.....	.....	643,867	July.	1892	.40
123	Quincy, C.	Mich..	1,250,000	50,000	25	200,000	Dec..	1862	.....	7,470,000	Feb..	1895	4.00
124	Red Cloud	Idaho	1,000,000	200,000	5	.....	.....	.....	.....	153,000	Dec	1892	.10
125	Retriever, L.	S. Dak	1,250,000	250,000	5	*	.....	.....	.....	20,000	Aug..	1891	.03
126	Rialto, G.	Colo..	300,000	300,000	1	*	.....	.....	.....	50,250	Apr	1892	.01½
127	Richmond, s. L.	Nev..	1,350,000	54,000	25	*	.....	.....	.....	4,386,780	Sept	1893	25
128	Rico-Aspen	Colo..	5,000,000	1,000,000	5	.....	.....	.....	.....	325,000	Nov..	1894	.02½
129	Ridge, C.	Mich.	1,250,000	50,000	25	219,939	Mar.	1886	50	99,785	Feb..	1880	.50
130	Robinson Con., s. L.	Colo.	10,000,000	200,000	50	*	.....	.....	.....	585,000	Mar.	1886	.05
131	Savage, s.	Nev.	11,200,000	112,000	100	6,966,000	June	1893	.25	4,460,000	June	1869	3.00
132	Sierra Buttes, G.	Cal..	2,225,000	122,500	10	.....	.....	.....	.....	1,559,933	Oct..	1893	.12½
133	Sierra Nevada, s. G.	Nev..	10,000,000	100,000	100	6,521,910	Aug	1893	.20	102,000	Jan..	1871	1.00
134	Silver Cord, s. L. G.	Colo..	5,000,000	500,000	10	.....	.....	.....	.....	270,000	Apr..	1889	.10
135	Silver King, s.	Ariz.	10,000,000	100,000	100	97,479	Aug.	1892	.25	1,950,000	July	1887	.25
136	Silver Mg. of L. V., s. L.	N. M..	500,000	500,000	1	.....	.....	.....	.....	300,000	Dec.	1891	4.05
137	Small Hopes Con., s.	Colo.	5,000,000	250,000	20	*	.....	.....	.....	3,225,000	Oct..	1895	.10
138	Standard, G. s.	Cal..	10,000,000	100,000	100	100,000	June	1890	.50	3,761,159	Mar..	1895	.10
139	Swansea, g. s.	Colo..	600,000	60,000	10	.....	.....	.....	.....	39,000	Sept.	1892	.10
140	Tamarack, C.	Mich..	1,250,000	50,000	25	320,000	April	1885	3.00	4,070,000	Dec.	1894	4.00
141	Trinity Riv'r Hydr., G	Colo.	500,000	500,000	1	*	.....	.....	.....	37,500	Apr..	1894	.00½
142	Union	Colo..	1,250,000	1,250,000	1	*	.....	.....	.....	26,520	Dec..	1894	00½
143	United Verde, C.	Ariz..	3,000,000	300,000	10	*	.....	.....	.....	562,500	Dec.	1893	25
144	Victor, G	Colo..	1,000,000	200,000	5	.....	.....	.....	.....	265,000	Feb.	1895	.05
145	Ward Con., s.	Colo.	2,000,000	200,000	10	.....	.....	.....	.....	20,000	Dec..	1894	.05
146	W. Y. O. D.	Cal...	60,000	30,000	2	22,500	May.	1891	.10	96,000	Jan..	1895	10
147	Yankee Girl, t	Colo.	1,800,000	260,000	5	.....	.....	.....	.....	520,000	July.	1891	.25
148	Yellow Jacket, G.	Nev.	12,000,000	120,000	100	556,000	July.	1893	.2	2,184,000	Aug..	1871	1.50

NON-DIVIDEND-PAYING MINES

	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments. Total levied.	Assessments. Date and am't of last.		
1	Alliance, s. G.	Utah	$100,000	100,000	$1	$120,000	Feb..	1891	.10
2	Alloues, C.	Mich.	2,000,000	80,000	25	1,424,937	Oct..	1891	.10
3	Alpha Con., G. s.	Nev.	3,000,000	30,000	100	209.000	Sept.	1892	.10
4	Alta, s.	Nev..	10,080,000	100,800	100	3,369,880	Jan.	1892	.05
5	American Flag, s.	Colo..	1,250,000	125,000	1	300,000	June	1887	..
6	Anchor, s. L. G.	Utah.	3,000,000	150,000	5	560,000	July.	1893	.15
7	Barcelona, G.	Nev..	5,000,000	200,000	5	*	.....	.....	.....
8	Belmont, G.	Cal..	500,000	500,000	100	*	.....	.....	.....
9	Belmont, s.	Nev..	5,000,000	50,000	100	735,000	April	1886	.10
10	Best & Belcher, s. G.	Nev.	10,080,000	100,800	10	2,405,275	Aug..	1892	.25
11	Black Oak, G.	Cal..	3,000,000	300,000	100	*	.....	.....	.....
12	Brownlow, G.	Colo..	250,000	250,000	5	.....	.....	.....	.....
13	Brunswick, G.	Cal..	2,000,000	400,000	2	.....	.....	.....	.....
14	Bullion, s. G.	Nev.	10,000,000	100,000	100	2,890,000	Aug.	1892	.25
15	Butte & Boston, C. s.	Mont.	5,000,000	200,000	10	.....	.....	.....	.....
16	Butte Queen, G	Cal..	1,000,000	100,000	1	6,000	Jan..	1892	.....
17	Calaveras, G.	Cal..	500,000	500,000	5	.....	.....	.....	.....
18	Calaveras Con., G.	Cal..	800,000	160,000	10	.....	.....	.....	.....
19	California, G.	Cal..	1,000,000	100,000	5	9,000	Mar..	1892	.....
20	California Con. L. Q.	Cal..	2,250,000	450,000	10	.....	.....	.....	.....
21	Challenge Con., G. s.	Nev..	5,000,000	50,000	10	.....	.....	.....	.....
22	Chollar, s. G.	Nev..	11,200,000	112,000	2	1,850,000	May..	1892	.50
23	Colchis, s. G.	N. M..	500,000	150,000	5	.....	.....	.....	.....
24	Colorado, s.	Colo..	1,625,000	325,000	1	.....	.....	.....	.....
25	Comstock, s.	Utah.	1,250,000	250,000	100	.....	.....	.....	.....
26	Comstock Tun.	Nev..	10,000,000	100,000	100	35,000	Mar.	1887	.10
27	Con. Imperial, G. s	Nev..	5,000,000	50,000	50	2,062,500	Jan..	1892	.25
28	Con. New York, s. G.	Nev..	5,000,000	100,000	100	110,000	Mar..	1892	.10
29	Con. Pacific, G.	Cal..	6,000,000	60,000	10	198,000	June	1890	.10
30	Crescent, s. L.	Colo.	3,000,000	300,000	100	*	.....	.....	.....
31	Crocker, s.	Ariz.	10,000,000	100,000	1	165,000	Aug	1892	.05
32	Crowell, G.	N. C..	.....	500,000	.....	.....	.....	.....	.....
33	Dahlonega, G.	Ga.	250,000	250,000	10	*	.....	.....	.....
34	Decatur, s	Colo..	1,500,000	300,000	.....	.....	.....	.....	.....
35	Denver City, s.	Colo..	5,000,000	500,000	11	*	.....	.....	.....
36	Denver Gold, G.	Colo..	300,000	60,000	5	.....	.....	.....	.....
37	Dickens-Custer, s.	Idaho	2,100,000	420,000	5	.....	.....	.....	.....
38	Durango, G.	Colo..	500,000	500,000	1	*	.....	.....	.....
39	El Dorado, G.	Cal..	1,000,000	250,000	4	*	.....	.....	.....
40	Emma, s	Utah.	625,000	500,000	125	.....	.....	.....	.....
41	Emmons, s. L.	Colo..	2,000,000	2,000,000	1	.....	.....	.....	.....
42	Empire, s.	Utah.	10,000,000	100,000	100	.....	.....	.....	.....
43	Eureka Tunnel, s. L.	Nev..	10,000,000	100,000	100	*	.....	.....	.....
44	Exchequer, s. G.	Nev..	10,000,000	100,000	100	940,000	Jan..	1892	.25
45	Found Treasure, G. s.	Nev..	10,000,000	100,000	100	130,500	Jan..	1892	.50
46	Gogebic I. Syn., I.	Wis..	5,600,000	200,000	28	.....	.....	.....	.....
47	Gold Cup, s.	Colo..	500,000	500,000	1	*	.....	.....	.....
48	Golden Era, s.	Mont.	1,000,000	200,000	10	*	.....	.....	.....
49	Gold Flat, G.	Cal	1,000,000	100,000	10	5,000	Mar..	1892	.05
50	Gold Rock, G.	Cal..	1,000,000	500,000	2	.....	.....	.....	.....
51	Golden Feather Ch., G	Cal..	900,000	180,000	5	.....	.....	.....	.....
52	Goodyear G. s. L.	Mont.	1,000,000	200,000	5	13,000	Feb..	1892	.01
53	Grand Duke, s.	Colo..	800,000	80,000	10	.....	.....	.....	.....
54	Gregory Con., G.	Mont.	3,000,000	300,000	10	.....	.....	.....	.....
55	Harlem M. & M. Co., G.	Cal..	1,000,000	200,000	5	.....	.....	.....	.....
56	Hartery Con., G.	Cal..	1,000,000	100,000	10	22,000	Oct..	1890	.05
57	Hartshorn, g. s. L.	S. Dak	1,250,000	250,000	5	8 750	Sept.	1891	.00¼
58	Head Cent. & Tr., s. G	Aris..	10,000,000	100,000	100	16,981	Mar..	1892	.03
59	Hector, G.	Cal..	1,500,000	300,000	5	45,000	Jan..	1889	.15
60	Himalaya, G. s. L.	Utah.	1,800,000	80,000	10	12,800	Oct.	1892	.00¼
61	Holywood	Cal..	200,000	100,000	2	.....	.....	.....	.....
62	Huron, C.	Mich..	1,000,000	40,000	25	280,000	May	1887	3.00
63	Idaho, G.	Idaho	1,250,000	250,000	5	.....	.....	.....	.....
64	Ingalls, G	Colo..	100,000	20,000	5	.....	.....	.....	.....
65	Ironton, I.	Wis..	1,000,000	40,000	25	.....	.....	.....	.....
66	Iroquois, C.	Mich..	1,250,000	50,000	25	.....	.....	.....	.....
67	Kentuck Con.	Nev..	10,500,000	105,000	60	57,750	July	1892	.10
68	Julia Con., G. s.	Nev..	11,000,000	110,000	100	1,463,000	Jan..	1889	.10
69	Justice, G. s. C.	Colo.	500,000	500,000	1	*	.....	.....	.....
70	Lacrosse, G.	Colo..	1,000,000	100,000	10	*	.....	.....	.....
71	Little Josephine, s.	Colo..	250,000	50,000	5	.....	.....	.....	.....
72	Lone Star Cons., G.	Cal..	500,000	500,000	1	10,000	April	1892	.60¼
73	Madeleine, G. s. L.	Colo..	750,000	50,000	1	4,500	Feb.	1892	.06¼
74	Mammoth Gold, G.	Ariz..	2,500,000	500,000	5	*	.....	.....	.....
75	Mayflower Gravel, G.	Cal..	1,000,000	100,000	10	*	.....	.....	.....
76	Mexican, G. s.	Nev..	10,000,000